July 2000
Volume 68 No 7

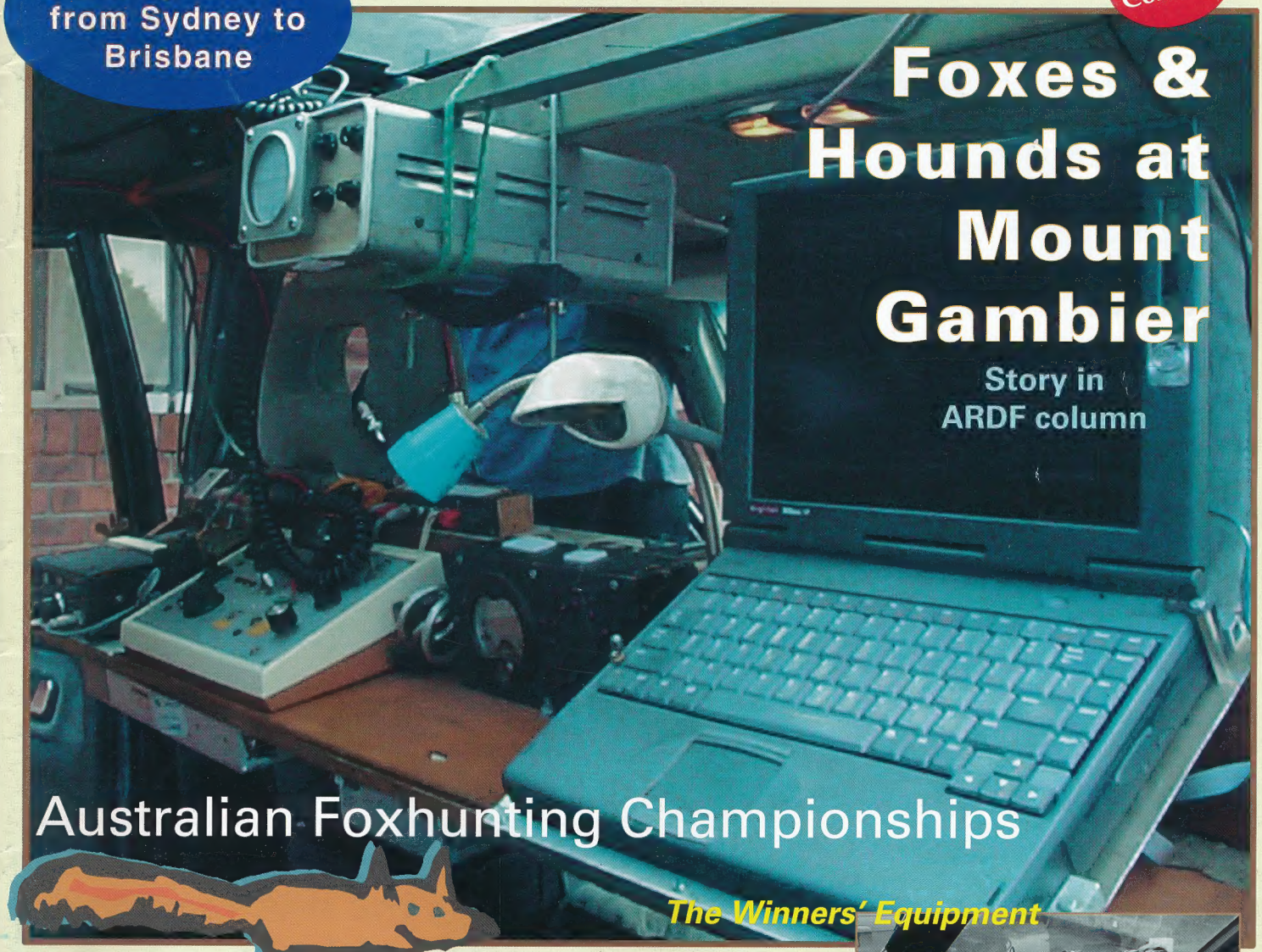
Amateur Radio

Awards Contests

Walking 'On Air' from Sydney to Brisbane

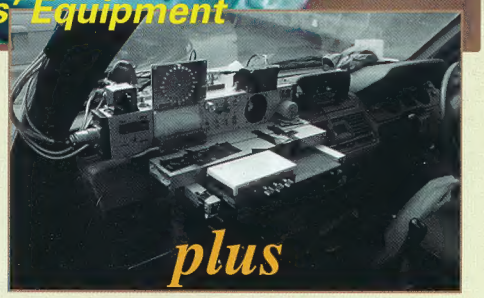
Foxes & Hounds at Mount Gambier

Story in ARDF column



Australian Foxhunting Championships

The Winners' Equipment



plus

WIA, Divisional & Club News
ALARA
& regular columns

- A "Swinging-Link" Antenna Coupler
- Using A Regulated Power Supply to Charge a Lead Acid Battery
- An Active Loop Converter For The LF Bands
- The Handlebar & the Halo

Gil Sones VK3AUI

Technical Abstracts:

Long Wire for Six and Ten

Homebrew ESD Mat

WIA Yearbook 2000

Callbook Listings
Frequency Listings
Band Plans
Repeater Lists
Beacon Lists
Satellite Lists
Licence Conditions
Examiner Lists
Special Interest Groups
Public Relations Notes
Radio and TV Freqs.
and much, much more!

2000 is a great year to have an up-to-date call book. This YEARBOOK edition contains all of the content you have come to expect of the WIA callbook as well as some new items

It is more than a callbook, it's a Yearbook, the WIA Yearbook!

The "WIA Yearbook 2000" is now available from Divisional Bookshops and selected outlets

Amateur Radio

The Journal of the Wireless Institute of Australia

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July 2000

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Our cover this month

Some of the equipment used to win the Australian Foxhunting Championship.

See story in ARDF column, page 13

Contributions to Amateur Radio
Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues
Back issues are available directly from the WIA Federal Office (until stocks are exhausted, at $4.00 each (including postage within Australia) to members.

Photostat copies
When back issues are no longer available, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest
National Radio Society
Founded 1910

Representing
The Australian Amateur Radio Service

Member of the
International Amateur Radio Union

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Richard Jenkins VK1RJ

EDITORS COMMENT

Amateur Radio is a great hobby

We Amateurs have a great reputation for working together and helping a mate.

The WIA was formed to enable Amateurs to help each other and has become the officially recognised voice of Amateurs in Australia. It has a broad structure, with Amateurs from all sorts of backgrounds who bring many different skills to the organisation.

The basic contact point with the WIA is the state division,which needs to be dynamic and open to all. We need to feel our views will get a hearing there.

Amateur Radio Magazine is the journal of the WIA. It conveys information on changes to the regulations we operate under and the actions being taken to improve our operating conditions.

We also print technical articles and general articles on the things people do, recent and long past.

We provide columns on specific topics and an *Over to You* spot where we can air peoples views and start discussions. This month letters still discuss Morse requirements for access to HF bands and also its usefulness as a communications mode.

The strength of the WIA is its volunteers. Volunteers do just about all the work of the WIA, so give them support in the jobs they do for all of us. If you do not like something please offer some ideas on how the situation can be improved.

It has been suggested we include articles using old technology. So if I get an article using valves it will be considered, but the parts will have to have a high probability of still being in many 'junk boxes'.

John Loftus, VK4EMM and George Down VK4XY are representing Australia and the WIA in the World Team Radiosport Championship in Bled, Slavonica this month; we have sent them best wishes for success. This is one International activity for Radio Amateurs; there are also Fox Hunts and their variants.

What do you find most satisfying about having and using your Amateur Licence ? I took the plunge and bought a 1.2GHz transverter kit. I'll let you know how I get on putting it together and operating it. I'll need a big magnifier to see the SMCs and solder them in place !

This month's suggested activity :

Take part in the RD Contest

It is a mark of respect to all Radio Amateurs who died in war. It is a chance to meet old friends and make new ones. It is a friendly contest. It is a chance for amateurs to work together within a state to win a Trophy. VK7 have won it for the last 4 years !

Colwyn VK5UE

NEW WIA MEMBERS

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the months of

APRIL 2000

L21093	MR M W WILLING	VK2TST	MR S P SOLOVIEFF
VK2GJT	MR G J TOWELLS	VK3HKR	MR K ROBERTSON
VK2HCU	MR P C BISHOP	VK3VO	DR R C LILE
VK2KZX	MR S H JONES	VK7LCW	MR P S AICHBERGER
VK2TQT	MR L GORDON	VK7XDB	MR D BRAMICH

MAY 2000

L21174	MR R B COOPER	VK2MID	MR D WALKER
L21175	MR F W J NEWLYN	VK2OA	MR A I MADIGAN
L50616	MR D R FABER	VK2TQX	MR C J DINGLE
VK2AFL	MR A J LARK	VK3DLH	MR H SMALL
VK2AXD	MR E A DRUITT	VK3TI	MR T SMITH
VK2HDO	MR C KOOK	VK3WB	MR A WILSON
VK2HPC	MR P R CLEMSON	VK3ZFI	MR E OSBORN
VK2IQE	MR Y YAMAMOTO	VK4EMS	MR S B SALVIA
VK2KXG	MR R G HENLEY	VK8ZAB	MR A D BAKER

WIA News

Compiled by Richard Murnane VK2SKY
Federal News Coordinator

VK could join CEPT licence system soon

Australia is set to join the CEPT Harmonised Amateur Radio Examination Certificates (HAREC) system, once the Australian Communications Authority (ACA) finalises the required internal administrative procedures. When the ACA has done that, and not before, it will mean holders of a HAREC issued by participating overseas countries can operate in Australia, and vice versa.

There are more than 30 countries in the CEPT system, in Europe plus the United States, New Zealand, and South Africa. It is unclear how many have adopted the HAREC facility of CEPT licensing.

Although the European Radiocommunications Office (ERO) has announced the acceptance of the Australian qualifications into the HAREC system, the ACA has told the WIA it is not yet ready.

It is understood that the ERO decision does not replace the existing reciprocal licensing agreements that Australia has with other countries, but HAREC is in addition or complements those formal agreements.

The WIA has a long-standing policy to seek recognition of the Australian licence syllabus by the CEPT (European Conference of Postal and Telecommunications Administrations), and this has now happened.

In July 1999, the WIA wrote again to the ACA to revive the CEPT issue due to an expected large number of overseas visitors to Australia for the Olympic Games. The WIA remains hopeful that the ACA can implement the system as soon as possible so it can be of benefit to visitors during the Olympics.

(WIA Victoria News Online www.tbsa.com.au/~wiavic)

Standard to Protect Against EMR Expanded

Consumers will soon be protected against electromagnetic radiation (EMR) from a wider range of radiocommunications equipment, the Australian Communications Authority (ACA) said today.

The ACA is set to increase the scope of its mandatory EMR Human Exposure Standard from 1 June 2000 in response to community concerns about the possible adverse health effects of mobile technology.

Electromagnetic radiation is the transmission of energy in the form of waves that have an electrical and magnetic component, such as radio waves from mobile phones.

The revised Standard will apply to all mobile phone handsets and base stations, cordless phone handsets and cradles, and satellite phone handsets in the 800 - 2500 MHz frequency range. This includes GSM 1800 MHz cellular mobile handsets, 915, 928 and 2400 MHz cordless phones and 1600 MHz satellite phone handsets.

"The increase in scope will ensure the public is safeguarded against the known effects of EMR from newer mobile technologies," Radiocommunications Standards Manager Ian McAlister said.

"The new regulatory arrangements support current international scientific opinion which maintains that equipment operating in accordance with recognised human exposure safety standards will not pose a health risk," he added.

Responsibility for compliance will depend on the type of radiocommunications transmitter.

For hand-held devices, manufacturers, importers and agents must ensure compliance before placing their product on the market. This includes declaring conformity with all applicable standards, creating and maintaining a folder of supporting documentation, and labelling products.

For transmitter installations, owners and operators must show compliance before the ACA will issue or renew their radiocommunications licence.

The ACA will enforce compliance through a system of random audits of compliance documentation and complaint investigations.

A further extension of the standard is planned later in the year, to capture low power devices including baby monitors and two-way radios.

For more information contact:
Ian McAlister
Australian Communications Authority
Telephone: (02) 6256 5451

(ACA web site, http://www.aca.gov.au/media/2000/25-00.htm)

IARU Region 3 Conference website Online

The International Amateur Radio Union Region 3 Conference will be held in Darwin, from 28 August through 1 September 2000, and the official conference web site is now up and running.

The site has been compiled with the assistance of Adrian VK5ZBR, author of the Amateur Radio Experimenters Group web site in Adelaide. The web address is: http://www.cck.net.au/iaru/.

This is still under development, and will have further news and information about the conference, and the WIA papers and information added, as the conference date approaches.

Any comments can be directed to Grant vk5zwi@cck.net.au.

(Grant Willis VK5ZWI, WIA Federal / IARU Liaison Officer)

ACA Approves Internet Linking of Repeaters

WIA Federal councillor and ACA liaison committee member Glenn VK1XX, reports that the ACA has approved the linking of amateur repeaters using the Internet.

"The ACA guidelines for linking require that the Internet be used as an end to end link only" Glenn said.

"The stations operating the link must employ security and filtering systems which prevent access to the public telephone network by stations using the link. Access to the link from the Internet must also be prevented. The only way to get access to the link must be to transmit on the input frequency of either repeater".

"I would like to publicly thank Alan, VK6BN for his outstanding work in this area. Alan's linking experiments served as the catalyst for general ACA approval of Internet linking. His actions typify the true pioneering spirit of amateur radio". Glenn said.

So there you have it. Looking to stimulate more traffic on your local repeater? Why not link it to a repeater in the UK or USA ?

For more information on Internet linking of repeaters, e-mail Glenn at vk1xx@gmdss.com.au.

(Glenn Dunstan VK1XX)

Amateur and CB Documents Updated on Web

A number of documents of interest have been updated on the ACA web site, including:

- *ACA Licensing Amateur Operating Procedures* (http://www.aca.gov.au/publications/info/regs.htm)
- *ACA Licensing Citizen Band Radio Stations* (http://www.aca.gov.au/publications/info/cbrcl.htm)
- *ACA Licensing Disclosure of Personal Information* (http://www.aca.gov.au/publications/info/privacy.htm)

The last of these documents relates to personal information about radio licensees that is publicly available, for example on the ACA web site.

(ACA web site)

PNG Moves to 5 wpm

PANGTEL, the ACA's counterpart in Papua New Guinea has approved full access to all HF Amateur bands, as well as higher bands as previously allowed, for holders of the Intermediate Amateur Operator's Certificate of Proficiency. This follows recent similar moves by Australia and other countries.

The granting of extended privileges includes access to the VLF band in the range 165 through 190 kHz.

It was not reported when the new privileges were due to come into effect. Similar changes in Australia are expected to come into effect around "mid-year". In the USA, they have been in effect since 15 April this year.

(Rick Warnett P29KFS, p29kfs@daltron.com.pg)

VK Experimenter's Handbook Project

The Amateur Radio Experimenters Group Inc, in South Australia, is interested in publishing an experimenter's type handbook. In the past, quite a few good books have been written by Australian amateurs but nothing like the large ARRL and RSGB handbooks.

Hams and electronic buffs in Australia are all quite clever people and quite capable of putting enough information together to produce such a book. However it needs to have projects with parts we can buy in Australia!

For more information about the project, visit the AREG book web page at http://www.cck.net.au/areg/book/book.htm.

You can contact AREG by one of the following means:

- PO Box 6539, Halifax Street, Adelaide S.A. 5000
- email: eagle@cck.net.au
- packet: VK5ZBR @ VK5SPG

(Adrian VK5ZBR via QNEWS)

Marine Radio Op's Handbook On-line

Of interest to maritime mobile operators, or Amateurs interested in marine operations: the April 2000 edition of the *Marine Radio Operators Handbook* is now available in electronic form, from the Australian Communication Authority web site, at *http://www.aca.gov.au/publications/brochure/rib175.pdf* * MERGEFORMATINET

(ACA web site)

Embargo Clears Way for Bigger 80m DX Window

The Australian Communication Authority's embargo on further spectrum allocations to fixed and mobile services between 3776 and 3800 kHz heralds the start of a clear out of services from what will be an expanded 80m DX "window" for Australian Amateurs.

This band will be reallocated to the Amateur service on 1 January 2004. Existing fixed and mobile services will gradually migrate to other band segments before then.

The band reallocation is the result of representations made by the Wireless Institute of Australia's ACA Liaison Team (http://www.wia.org.au/Issues/sub_80m.pdf * MERGEFORMATINET).

WIA Federal AGM

WIA Federal President Peter Naish VK2BPN reports:

The 64th. WIA Federal Convention was held in Melbourne over the weekend April 29/30th. 2000. It was attended by delegates from each of the seven WIA Divisions as well Directors. The President, Peter Naish VK2BPN, chaired the meeting.

The agenda included the AGM for WIA Federal which included the adoption of the Annual Report and reports from coordinators. As usual, the various office bearers retired at the AGM and elections for the ensuing year took place. Peter Naish was selected for a third consecutive term as Federal President and John Loftus VK4EMM continues as a Federal Director. The majority of Federal coordinators were reappointed for a further year.

The main event for this convention was a review of WIA Policy especially in regard to the many papers currently under preparation for submission by WIA at the IARU Region 3 Meeting in Darwin in August. Considerable progress was made and it was pleasing to find the large degree of accord that existed between the seven Divisions on the policy issues. It is proposed that more detail of these matters will be made available very shortly.

The meeting welcomed the attendance of two delegates from NZART, namely Carol Gaudin ZL2VQ and Fred Johnson, ZL2AMJ who is also a Director of IARU Region 3. These guests participated in the Convention and provided a viewpoint from New Zealand on many matters.

It was one of the most constructive Conventions to be held in recent years and illustrated the strength and dedication of all WIA Divisions in making sensible policy decisions on behalf of all Australian radio amateurs. Everybody went away knowing that progress had been made but conscious of the need to continue to work together on the many critical issues.

(WIA Federal President Peter Naish)

APRS in Marathon

While most of Sydney started getting out of bed on a sunny Sunday morning, the Sydney Marathon, an Olympic Test Event was finishing at the Homebush Bay Olympic Stadium.

The marathon was designed not only to test the course and the athletes, but also to test the technical preparations for the games. In the middle of all these preparations was local amateur Darryl Smith VK2TDS.

Darryl was monitoring a network of TNC's and GPS's from a control centre in the suburbs surrounding the Homebush Olympic park. The network allowed each vehicle or aircraft to monitor the location of all the other mobile units. This allowed aircraft to stay directly above the camera truck reducing the possibility of the microwave path being blocked by buildings.

What makes this story unusual is that all the equipment and software used was developed for Amateur Radio use. The only parts of the system that did were not from amateur radio suppliers were the radios, and the frequencies they operated on. "This is basically taking what we hams have developed for our own use, and found a commercial use for it" Darryl commented.

"The system generally worked well" remarked Darryl after the race had concluded. "With any luck this is just the start ..."

More information on APRS is available by contacting darryl@radio-active.net.au

(Darryl VK2TDS)
via QNEWS

WRTC 2000 in Slovenia

Two Australians are to participate in the World Radiosport Team championship (WRTC) - an event held every four years involving the world's best contest operators.

John Loftus VK4EMM and George Down VK4XY will be in Bled, Slovenia in southern Europe, to compete against 53 other teams for the prized WRTC bronze, silver and gold medals.

To win a medal, a team has to be in the top three after a week of competitive operating events.

The WRTC attracts many spectators keen to seen the world's top contest operators in action, either to lend personal encouragement or learn a few tricks.

The main event is the IARU HF Chamionship during July 8 and 9. The WRTC teams will be in the contest using Sierra 5 (S5) callsigns that have a unique three digit identifier. Listen for them on both SSB and CW, 80 metres through to 10 metres. They will be very keen to work as many stations as possible because the IARU HF Championship is the final event that determines the medal winners.

Work each station on each mode, on each band. The contest exchange is signal report plus your ITU Zone. The rules of the IARU HF Championship are published in the June edition of Amateur Radio magazine.

Jim Linton VK3PC

WIA News

WIA seeks tighter controls on LIPDs

In a submission to the ACA, the WIA stated its position as being "that LIPDs, in their present form, pose an unnecessary interference management burden to the ACA, the WIA, and the general public. The WIA is seeking tighter restrictions of LIPDs to lower the level of interference into Amateur Service facilities to a truly 'low potential', rather than the current 'high potential'.

The ACA has been urged by the WIA to mandate major changes affecting the manufacture, sale, use, and licensing of Low Interference Potential Devices on the 70cm band. The ACA had announced earlier that it was revoking the Class Licence for LIPDs and called for submissions ahead of it issuing a replacement licence that would address concerns about interference experienced with LIPDs.

The WIA has been working hard on this issue since it was unsuccessful several years ago in convincing the ACA that LIPDs on 70cm would both cause and suffer interference.

The ACA in the past year has been particularly receptive to the WIA concerns, and undertook to review the situation based on documented proof that interference was occurring.

In a 19-page submission delivered to the ACA on 31 May 2000, the WIA sets out a series of measures it believes will reduce the interference impacts of LIPDs in the 433.05 - 434.79MHz band. The WIA has suggested that as a "partial remedy" to the interference problems being experienced, the ACA adopt the tighter standards set by CEPT in Europe for LIPDs, known there as Short Range Devices (SRDs).

These include:

- Operation of SRDs is intermittent with a maximum duty cycle of 10%
- Voice and audio devices are not recommended for use
- A maximum output power level is set at 10mW EIRP

In comparison, the ACA has permitted 100% duty cycle, allowed voice transmission which creates a pseudo-CB radio, and 25mW transmit power. In its submission it said, "If the ACA does not see fit to restrict LIPD operation to non-voice applications it is inevitable that there will be continued interference problems. It has provided details of interference from LIPDs suffered by amateur 70cm repeaters serving all mainland Australian states, and a case of LIPD car RF keylocks malfunctioning due to amateur repeater and simplex transmissions.

The submission suggests: "One solution would be to confine the operation of voice LIPDs to frequencies that are not ordinarily used for amateur repeater inputs." The WIA said as a starting point, the ACA could publish lists of amateur 70cm repeaters and their service areas, and state that usage of LIPDs within 30km of such a repeater is not permitted. However the WIA's preferred position is "to see the 433.050 to 434.790MHz segment deleted from the LIPD Class Licence determination completely."

The WIA said it was pleased that the ACA has in its proposal made references to safety of life and commercial implications of using LIPDs, on the 70cm band where they may experience interference. Interference to LIPDs has obvious implications for workplace health and safety should it disrupt an industrial process or other essential signaling.

The WIA referred to use of similar safety warnings used in Europe, and believes that for them to be effective they would need to be included on product packaging and literature. The WIA now awaits the outcome of the ACA's deliberation on the submissions it has received on the 70cm LIPDs.

Jim Linton VK3PC

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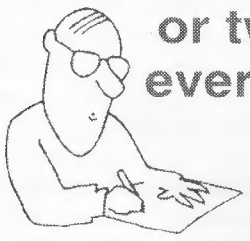
There's a story or two in everyone



Have you submitted yours to Amateur Radio?

SILENT KEY

RON DUNNE VK3MEH

Ron was keen on electronics from boyhood in Flinders and during his early adult life he built several small portable radios. Later he built the home amplifier and record player system.

He learnt Morse code as a Scout and built on that foundation as he studied at TAFE in Wantirna in the early seventies. From then on he collected more equipment and enjoyed contacts with numerous other operators. He particularly liked taking the small 'handheld' when we were travelling, making some interesting contacts in the Gippsland and Peninsular areas. On retirement in the mid eighties, he valued increasingly his talks with radio people and when interest waned, due to a long illness, he still liked to listen to ordinary shortwave radio for many hours.

He was a quiet man who valued one to one contacts. Ron died at home in Upwey on May 10th this year.

Heather Dunne

ar

VI5RAS

75th Birthday Celebrations

The month of November in the year 2000 marks the 75th birthday of the formation of the Royal Australian Corps of Signals. As a consequence a special event amateur station VI5RAS will be operated for the whole of that month as a celebration.

VI5RAS is being sponsored by the Royal Australian Signals Association (S A) and its operation is approved by the Certa Cito committee in Canberra.

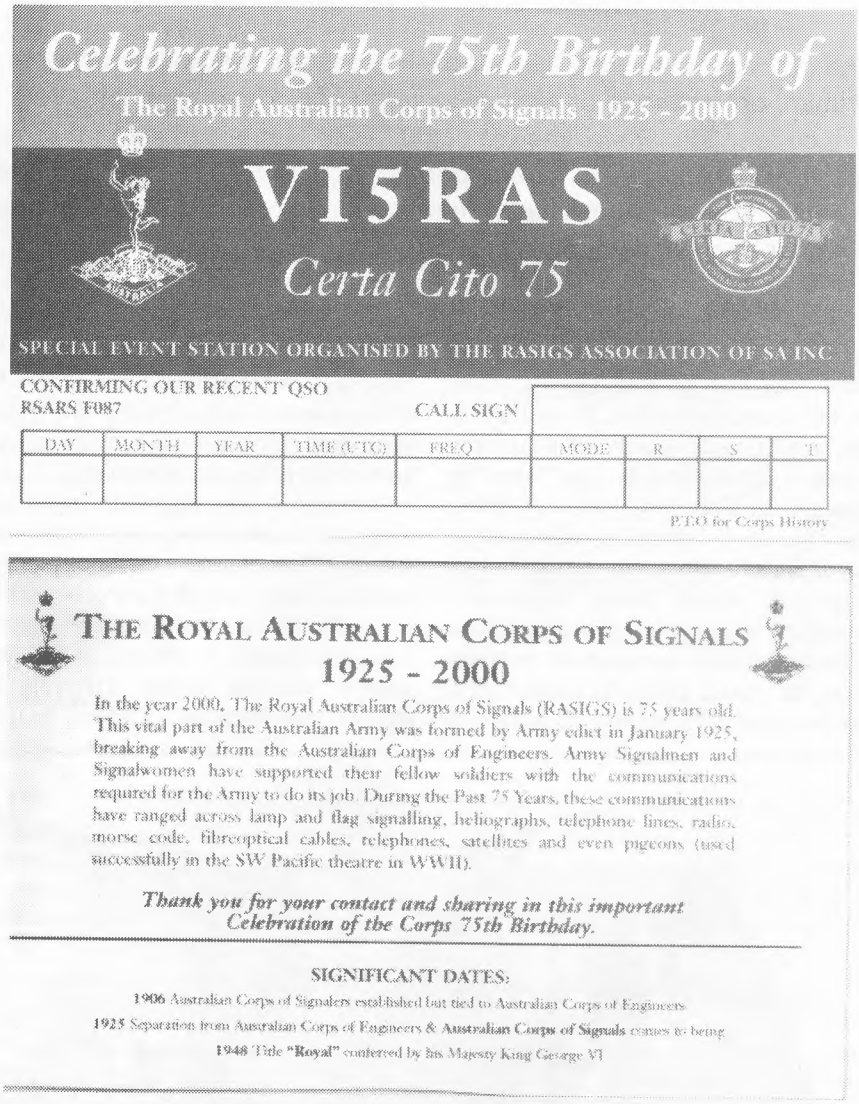
The above mentioned association has a few qualified amateurs within its ranks but would like to involve more amateurs in the running of the station.

Mainly, the station *will be run* from individual home stations *duty rostered,* so if you are an amateur and an ex or serving member, or have an affiliation past or present with a signals unit of HM. Forces and resident in Australia and interested in participating please direct your enquires to VI5RAS 14 Jenolan Cresc – Hilbank, S A, 5112. Tel. (08) 8252 8939.

It is envisaged that some interstate amateur stations will be appointed to operate VI5RAS on a portable basis having been suppled with the proper authorization. There is scope for non-amateur ex or serving members of a signals unit to contribute as operators under the supervision of a qualified authorized amateur. There is also scope for an authorized operator to operate the station at a special location other than his/hers normal QTH.

Godfrey Williams VK5BGW address as above for VI5RAS

ar


Celebrating the 75th Birthday of
The Royal Australian Corps of Signals 1925 - 2000
VI5RAS
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DAY
MONTH
YEAR
TIME (UTC)
FREQ
MODE
R
S
T
P.T.O. for Corps History
THE ROYAL AUSTRALIAN CORPS OF SIGNALS
1925 - 2000
In the year 2000, The Royal Australian Corps of Signals (RASIGS) is 75 years old. This vital part of the Australian Army was formed by Army edict in January 1925, breaking away from the Australian Corps of Engineers. Army Signalmen and Signalwomen have supported their fellow soldiers with the communications required for the Army to do its job. During the Past 75 Years, these communications have ranged across lamp and flag signalling, heliographs, telephone lines, radio, morse code, fibreoptical cables, telephones, satellites and even pigeons (used successfully in the SW Pacific theatre in WWII).
Thank you for your contact and sharing in this important Celebration of the Corps 75th Birthday.
SIGNIFICANT DATES:
1906 Australian Corps of Signalers established but tied to Australian Corps of Engineers
1925 Separation from Australian Corps of Engineers & Australian Corps of Signals comes to being
1948 Title "Royal" conferred by his Majesty King George VI

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A "Swinging-Link" Antenna Coupler

Drew Diamond, VK3XU,
45 Gatters Rd.,
Wonga Park, 3115.

One of the most flexible all-round HF antennas is a horizontal, or inverted-vee doublet, or horizontal or vertical loop fed with "open-wire" line. Well-made open-wire copper line, where the dielectric (the material between the wires) is mainly air, has very low loss, even when operated at high SWR's. A ground-independent radiating wire as short as a quarter wavelength on the lowest band can be made to work quite satisfactorily.

Amateur transmitting amplifiers generally require a low-reactance unbalanced load of nominally 50 ohms for their correct operation. Indeed, solid-state amplifiers ordinarily have circuitry to reduce the power if the load "seen" by the amplifier is not very close to 50 ohms. However, the balanced impedance at the station end of an open-wire fed doublet or loop will show large frequency-dependent variations in impedance. That is, the impedance, as seen at the near end of the line, varies greatly between bands. Furthermore, it is usually of unknown value, from tens, to thousands of ohms, and may be inductively or capacitively reactive. It is therefore not practicable to simply connect such a line to a transceiver and expect efficient multi-band operation. Some kind of coupler is required.

Although it may appear to do so, an antenna coupler does not "tune" an antenna. The standing wave ratio upon the feed-line, and ratio of wave distribution upon the radiating wire is not altered when the coupler is adjusted so that the system "accepts" power. The coupler simply provides an efficient match between the output/input of the radio, and the complex impedance at the transmitter end of the line, thus allowing the radio to see 50 ohms resistive. It does not matter that the SWR on our low loss feed-line may be high .

The multi-band doublet or loop, is not a "compromise" antenna, unlike certain trap antennas, which waste much of the available radiating part in the cause of operating convenience. When the coupler is correctly adjusted, an open-wire fed antenna uses all of the radiator, from the lowest band, where it may only be a quarter wavelength long, to the highest, where it will be several wavelengths, and therefore have substantial gain in some directions, and rival rotatable beams in the DX stakes. More later.

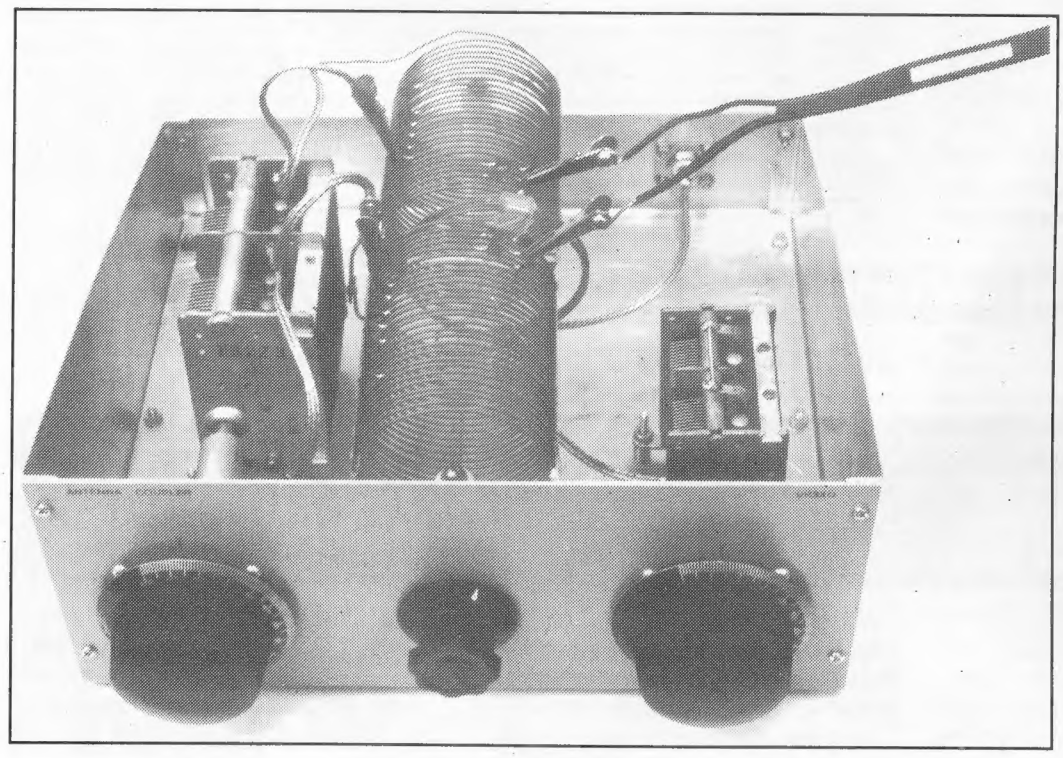
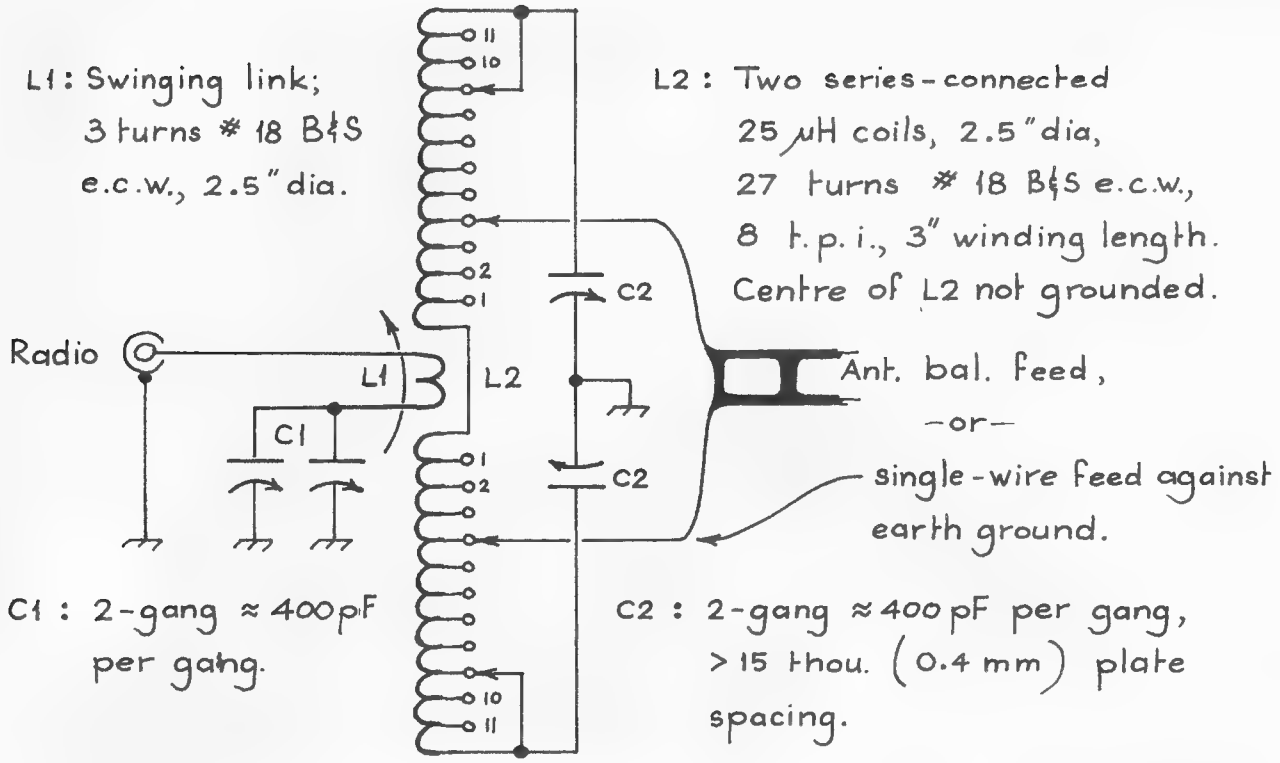


Photo 1

A "Swinging-Link" Coupler

Like most amateurs with a preference for wire antennas, I have a keen interest in the various antenna coupler configurations, and have built many of them in my quest for the ideal device (if such a thing exists in reality). The following observations are probably muddied by differences in the efficiencies of my coils and capacitors. Never-the-less, significant variations in measured feed-line



"Swinging-Link"
Antenna Coupler.

Fig 1

current, and accuracy of balance have been observed between circuit types. And some iterations were found to be rather restricted in their impedance matching range.

Very few published designs invite the builder to measure the feed-line current co-incident with minimum link SWR (but see Ref. 1). An achievement of a 1 : 1 SWR on the radio/coupler coax link may not necessarily indicate the best and only coupler adjustment for a specific band (Ref. 2). In particular, the popular American T-network "Transmatch" was found to be lacking in range, and suitability for balanced line work. Their widespread use of a 4 : 1 "balun" to interface between the unbalanced output of the T- network, and the balanced, unknown, probably highly reactive feed-line is very questionable. Certainly none of my attempts with various Transmatch and balun configurations would provide a satisfactory match and identical current in each line.

For some reason, perhaps related to the trend towards no-knob convenience, the swinging-link coupler (Refs 3 and 4, for example) has been absent from the standard radio handbooks for some years now, and is in danger of falling into undeserved obscurity. By having five, instead of the usual two or three variables, the device is capable of efficiently matching our 50 ohms to a very wide range of impedances, both balanced-line and single-wire feed. So let's have another look at this versatile device.

Circuit

See Fig. 1. Two series connected coils L2 are parallel connected with split-stator capacitor C2, whose rotor (frame) is connected to chassis ground. L2 is divided so that coil L1 may be coupled at their "zero-RF" potential point in the centre. Swinging-link L1 is mechanically arranged so as to be variable in the degree to which it may be coupled with L2. Capacitor C1 is used to series resonate with the reactance presented by L1. Capacitor C2 is tapped across L2 an equal number of turns from the outside of the coil, generally working inwards as operating frequency is raised. The antenna feed-line is connected to equidistant taps (for balanced line) inside those of C2 at a point where, after adjustment of C1, C2 and swinging-link, feed-line reactance is accommodated and a suitable match between the coax link and antenna is obtained.

Construction

The home-made aluminium chassis in Photo 1 measures 260 x 260 x 110 (apologies again for mixed inch and metric in what follows). The making of air-coil L2 was described recently in Ref. 6. Note that the turns of each side of L2 must wind in the same direction, and that the centre connection of L2 is not connected to chassis. The coil assembly

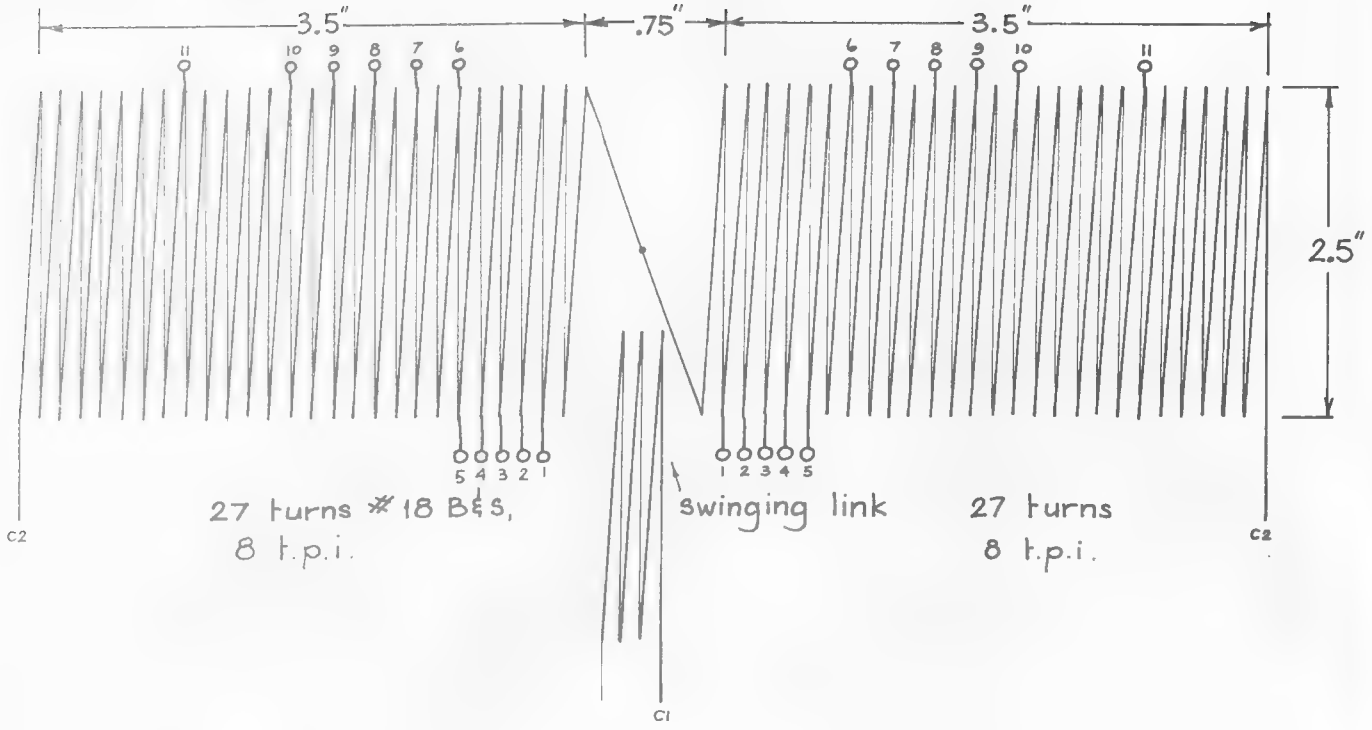


Fig 2

is supported upon two nylon (or similar) rods measuring 80 mm long x 12 mm dia. C2 and antenna feed-line taps are shown in Fig.2. Tapping points may be of shim brass; remove the wire enamel then fold a little tag of brass, about 5 mm x 15 mm around the wire to make a flag, clamp in place with an alligator clip, then solder. Taps 1 - 5 must be staggered a little to prevent shorts.

A suggested method of providing a swinging-link is shown in Photo 2. Coil L1 is three turns of #18 B&S (1.3 mm) e.c.w. wound through holes spaced 2.5-inch in a perspex (or similar) support, and held there with small blobs of epoxy cement. An extension of the support is drilled 0.25" to accept a control shaft made from 0.25" plastic rod (#3 knitting needles are about this size, and make good insulated shafts for radio work). Fit a small set-screw, or cement to prevent slip.

The control shaft must run through corresponding clearance holes in the two nylon rods. The shaft may run in a plain bearing in rear the panel. Although not a fiddly adjustment in practice, a 6:1 panel mounted reduction drive will be found useful for operation of the swinging-link. All connections, especially those to the link and C2 "flying-leads" should be made with flexible braid. That shown is the outer braid removed from RG-58 coax. Remember to position C1 (the smaller capacitor in Photo 3) so as to allow interference-free operation of the link coil.

Capacitor C2 must have fairly wide-spaced plates, at least 15 thou/ 0.4 mm. That shown is a fairly commonly available (around the hamfest scene here) older style broadcast receiver type, made by AWA and MSP. C2 in my coupler does not flash over on bands between 3.5 and 28 MHz at power levels up to about 100 W CW. It will only take about 50 W on 1.8 MHz. No firm figures for power handling can be stated here because of the many variables in feed-line impedance. However, from 3.5 to 29.7 MHz, an AWA/ MSP cap. should do. If in doubt, use a 2-gang or split-stator with wider plate spacing. Capacitor C1 may be an ordinary 2 or preferably 3-gang broadcast type.

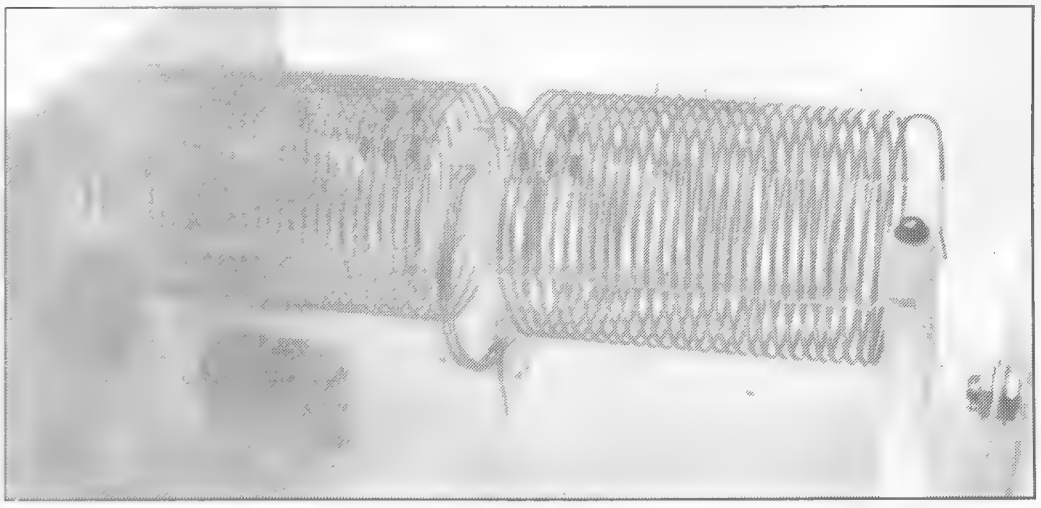


Photo 2

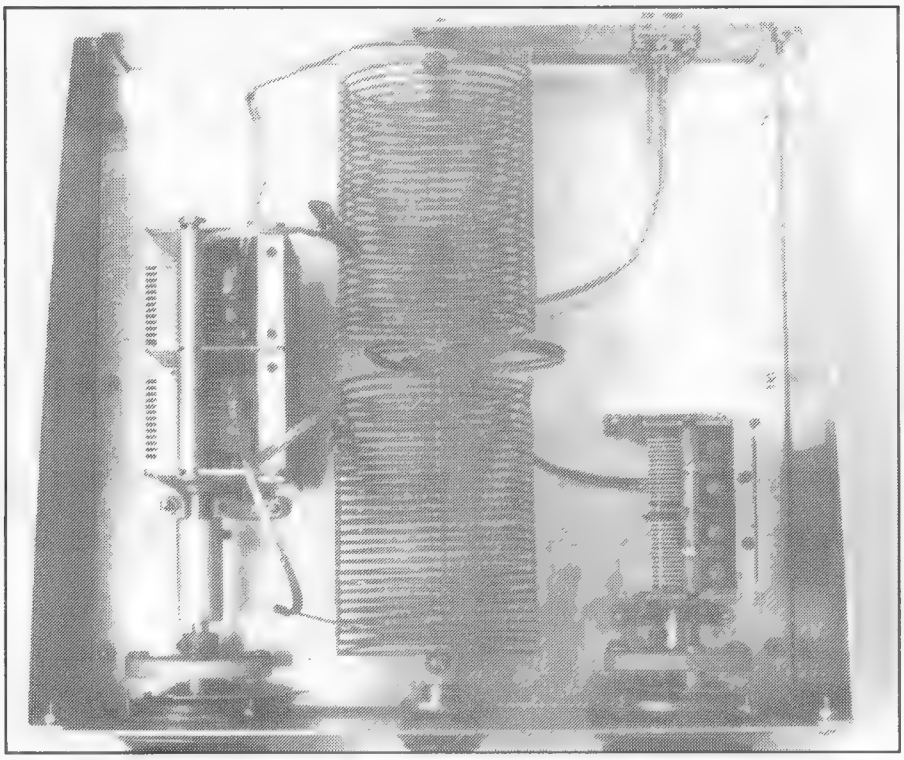


Photo 3

The knobs on the shafts of C1 and C2 may be directly coupled, or have vernier dials as shown. C2 is fairly sharp in adjustment and a vernier is recommended. C1 is broader, and less in need of a reduction drive.

All screws and hardware in the immediate vicinity of the coils should be brass, although, interestingly, a small number of steel screws do not appear to introduce measurable loss.

Antenna and feed-line

All of the standard radio handbooks give details of open-wire feed antennas. Some radiator and feed-line lengths will perhaps give an easier match on particular bands. However, in my experience, just about any convenient radiator and feed-line length will be "match-able". Some of my past (and present) antennas include; a 50-foot radiator + 25 foot feed-line, 70 + 35, 135 + 42, 270 + 35 and G5RV. All of these could be matched via a coupler like this one. If the system refuses to "load-up" on a certain band, the addition (or subtraction) of a few feet of line (or antenna- same each end) should allow a match to occur.

Photo 4 shows some common feed-line types. The best is probably home-made line made from electrical earth wire (or similar), with a perspex spreader about every 3 ' / 1 m. Hold in place with a copper tie-wire through small holes drilled in the speader. Line spacing is not critical. In my experience, this line is the least affected by rain and moisture, and that only to a very small degree, not usually requiring the coupler to be re-adjusted after rain.

Black or brown 450 ohm ladder line comes next (that it is "450 ohm" is irrelevant). The earlier line used hard-drawn copper, but new line is of copper-plated steel, which makes it a bit awkward to handle (and a little lossier I suspect). However, it can be routed past window frames and so on. Hint; with scissors or knife, remove alternate webs, which renders the line less affected by moisture. It should be taken down and washed yearly (grime traps moisture making the line more susceptible).

Low-loss "dog-bone" TV type is very good line if available. No longer manufactured, but turns up at hamfests etc. Also needs yearly washing.

Ordinary slotted TV line is the least

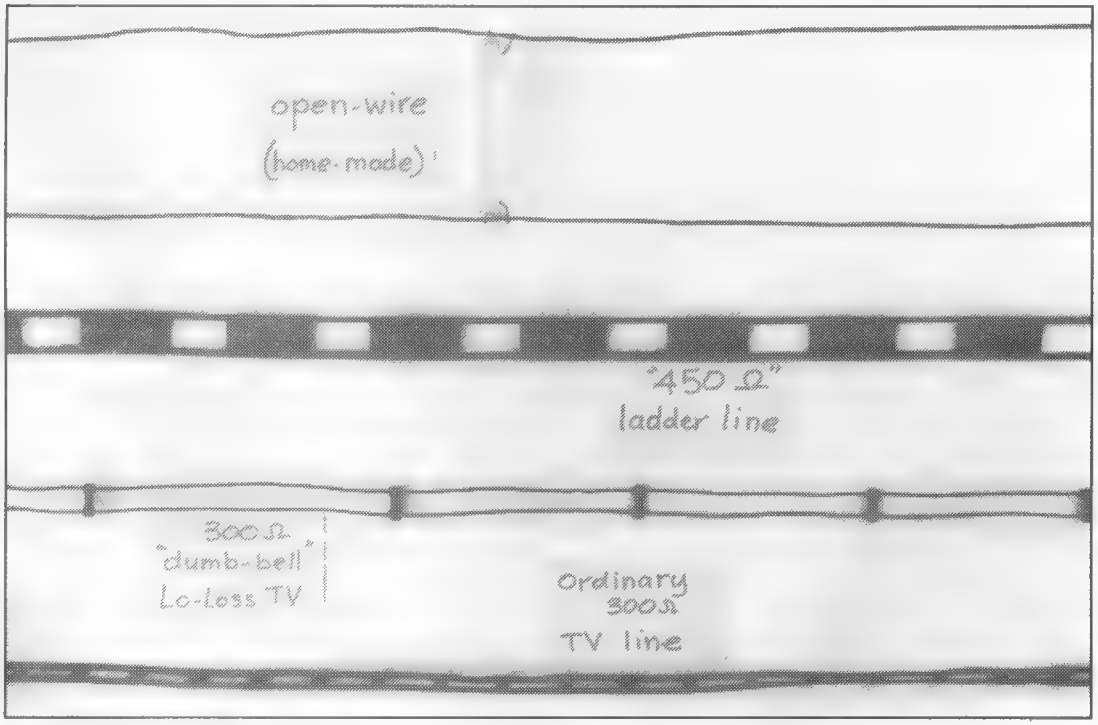


Photo 4

suitable line (most lossy), but quite good in an emergency, or for short runs inside a building or in awkward applications. Significantly affected by moisture.

Operation

Connect your radio to the coax connector of the coupler using a suitable length of 50 ohm coax cable-SWR meter-cable. The tap connections for C2 along L2 are made with a pair of alligator clips. Tappings for C2 and antenna feed-line are usually different for each band, and there can be no strict rules, as tappings depend on individual antenna configurations. As a rough guide; on 1.8 MHz the full inductance of L2 will probably be required, so connect C2 to the ends of L2. On 3.5 MHz taps 11 will (probably) be best. On 7 and 10.1 MHz try taps 6 or 7, 14 MHz try taps 6. On 18, 21 and 24 MHz; try taps 5, and 28 MHz will probably need taps 3 or 4.

The feed-line connection must always be inside (towards the centre of the coil) those of C2. Start by connecting to (say) taps 3. Position C1 and the link initially at full mesh. Now adjust C2 for maximum received band noise/signal. Experiment with all five variables until you feel the coupler is near peak adjustment. Now, on a clear frequency, apply the smallest tuning signal that your SWR meter will properly respond to (say 10 W). Again carefully adjust C2, C1 and link for best SWR (do not touch the taps when transmitting). If it cannot be made less than about 1.1, switch off and try a new pair of taps for feed-line and/or C2. When a satisfactory match is obtained, log the settings for that band on a suitable look-up table. Do the same for every band of interest, working from the outside of the coil as frequency is increased.

A pair of RF thermocouple ammeters, about 2 or 3 A f.s.d. (for 100 W) is the most ideal line current indicator (for balance and comparison- perhaps with other couplers). But these are now rare items, so if you are not the fortunate owner of a pair of meters, consider making a twin-lamp current indicator as described in Ref. 5.

For single-wire feed type antennas, a good earth ground must be connected to the coupler chassis. Adjustment is similar to that described for the balanced feeder. A neon lamp, placed near the line will glow for voltage feed, and a lamp current indicator (Ref. 5) will glow for current feed. Disconnect the feed-line from the coupler when not in use.

References and Further Reading:

1. "Balanced Line ASTU and Current Indicator"; Garrott, G0LMJ, in RadCom July/Aug '98.
2. "ATU Power Ratings"; Ian White's "In Practice" column in RadCom June '97.
3. "Wide-Range Coupler for Any Antenna"; ARRL H'book, 42nd (1965) edition, p354.
4. "Coupling the Transmitter to the Line"; ARRL H'book, 32nd (1955) edition, p313.
5. "A Current Indicator for Open-wire Transmission Lines"; Diamond, AR Jan. '99.
6. "Making Air-Wound Transmitting Coils"; Diamond, AR June '00.

ar

Trans-Tasman balloons thanks

Australian GEOGRAPHIC

10 March 2000

Peter Naish,
Federal President,
Wireless Institute of Australia,
PO Box 2175,
Caulfield Junction Vic 3161.

Dear Peter,

As I believe you would know, Australian Geographic hosted Mission Control for the recent Trans-Tasman Flyer balloon crossing. We were particularly pleased that amateur radio operators were able to play such an active role in Mission Control, and feel that their presence added a vital, additional element of safety to the expedition.

It's wonderful that so many of your members were willing to volunteer their time to monitor the crossing, around the clock, and that such interest was shown by radio amateurs, especially throughout eastern Australia and as far away as New Zealand.

We certainly appreciated the involvement of amateur radio operators at Mission Control and hope there may be other opportunities for us to co-operate.

Yours sincerely,

Howard Whelan
Publisher

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ARDF

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Fox-hunting on wheels

As this is my first article I must start off by thanking Ron VK4BRG for his excellent work in promoting ARDF and Foxhunting in his articles over the past couple of years, I do hope I can keep your interest in this facet of our great hobby.

ARDF usually refers to pedestrian style foxhunting, but most of you would be more aware of vehicle type hunts where you drive to the location of the transmitter and in some instances you would have to exit the car and sniff out the fox. Fox for the night could hide the fox just a few metres, or even kilometres from the nearest road. Here in Melbourne we hold regular monthly Foxhunts, usually between 4 and 7 teams compete in at least 6 hunts, mostly on 2m VHF. As for the ARDF side of foxhunting we would hold about 4 events per year, these hunts would be in local parks and forests, sometimes, suburban streets are incorporated in the competition area. Nearly all ARDF events in Melbourne are on maps kindly loaned by some of the Melbourne Orienteering clubs, these clubs have gone to a lot of trouble to create quite detailed maps which are excellent for ARDF events. In future ARDF columns I will try to detail each of many forms of radio direction finding.

Australian Foxhunting Championships

Over the weekend of June 10th and 11th about 12 teams headed off to Mount Gambier to compete in the WIA Australian Foxhunting Championships, if you are at all interested in radio direction finding attending the S.E.R.G. convention is a must. Competition is usually tough, in both the foxhunting and the equipment development stakes. If you suspect that home brewing is not being practiced much these days a tour through one of the competitors cars will change your mind. Under normal local hunts you could afford to make 2 maybe 3 mistakes and still be competitive, but in the national championships making only one mistake you can easily drop from a possible first, to last place. First event on the program was a distance based 2m foxhunt, at the start and finish of the event your odometer reading is taken and the team with the lowest total kilometres travelled is declared the winner. To take out first place the winning team actually travelled a slightly shorter route than the fox, only basic equipment was allowed giving some of the newer teams a competitive chance. For the rest of the weekend hounds located foxes on 80m, 10m, 6m, 2m, 70 and 23cm. At the end of all the hunts it was declared that the VK3HDF team consisting of Adam VK3HDF, Bryan VK3YNG, Steve VK3YLE, Glen VK3HXP and Bjorn VK3HBD were the 2000 Australian Foxhunting Champions. Congratulations to Adam and the rest of the team, we hope to see you back next year to defend your title.

SAR

At the recent Gambier Convention, there was a representative from the Australian Maritime Safety Authority, (AusSAR) recruiting amateurs with radio direction finding skills to assist the National Search and Rescue Organisation in locating distress beacons more commonly referred to as ELT's, EPIRB's. If you have experience in locating transmitters in the VHF and UHF region, maybe you too should be listed on the database. I will inform readers about future developments for this project when they are worked out. For more information try their website at: www.amsa.gov.au.

If you have any news about ARDF and Foxhunting in your area please let me know about it, I am QTHR or you can E-mail me on: vk3www@alphalink.com.au

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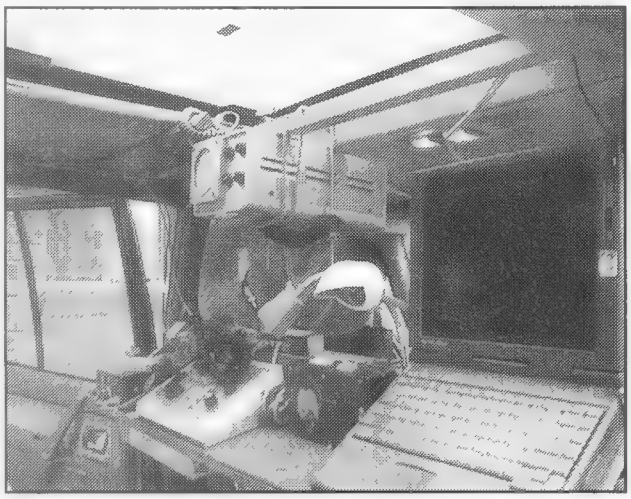


Inside the VK3YQN Foxhunting Pajero, notice the laptop for displaying moving maps.

Here is some of the equipment the current Australian Foxhunting Champions used to beat the opposition.

Using A Regulated Power Supply to Charge a Lead Acid Battery

Gil Sones VK3AUI

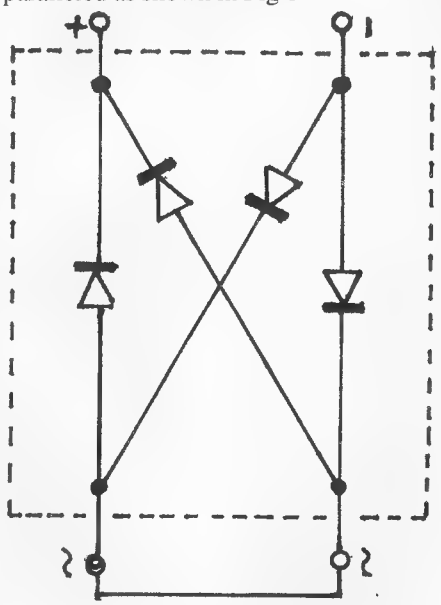
A regulated power supply can be used to charge and float charge lead acid batteries with only a small amount of work.

Many of the sealed batteries we use are designed for float charge service and may be adversely affected by the use of a normal automotive charger. Also it is possible to use a float charged battery supply as a no break type supply for radio equipment. The float charger supplies the normal drain and if the mains is interrupted the battery takes over automatically. On restoration of the mains the float charger tops up the battery.

If you connect a regulated supply directly to a battery without modification or any extra components you may find that several components in the PSU will be damaged. This is because in the absence of the primary supply from the mains the PSU circuitry is subjected to a reverse voltage. The internal filter capacitor is initially discharged with the mains supply off. When the battery is connected to the output terminals the discharged filter capacitor is charged by a current which passes through the regulator circuit but in the reverse direction to the normal current through the regulator. The regulator is subjected to the charge current for the filter but in the reverse direction to the normal current flow. This can result in the regulator circuit components being damaged. The regulator circuit must be protected from this occurrence.

The simplest way to use a regulated power supply as a float or regulated voltage charger is to simply connect a power diode between the output terminal and the battery being charged. However adjusting the output voltage can be a bit tricky as the output voltage sensing of the supply is on the wrong side of the diode. However it is possible to set this up without too much trouble. The diode voltage drop is around 0.6 Volt and so the supply must be set up to allow for this. If the supply has external sensing then simply connect it to the battery load side of the diode.

A suitable high current diode may be hard to obtain and difficult to mount. It will need a heat sink. A simple solution is to use the diodes contained in one of the potted bridge assemblies. By strapping the AC terminals two arms can be paralleled as shown in Fig 1



. Fig 1. Diode Bridge Strapped to Provide Power Diode.

The diodes have a good current rating and using a 35 Amp bridge most amateur power supplies can be accommodated. The bridge also has an isolated case which simplifies mounting on a heat sink. You could be dissipating around 10 Watts or more so a heat sink is needed.

There is another way which requires a simple modification to the regulated power supply circuit. This still requires a high current diode but it is only called upon to charge the filter capacitor and does not have to carry continuous output current.

The diode is connected between the regulated power supply output and the Filter capacitor in such a way that during normal supply operation it is reverse biased. If the supply is connected to a battery in the absence of mains input the diode will conduct and carry the filter capacitor charging current from the battery and protect the regulator circuit from the reverse current. This is shown in Fig 2. Note that the diode must still be a high current type but the heat sinking requirement is not as onerous. The main thing is to ensure that the diode can handle the high surge current into the filter capacitor. The diode may need to be a similar type to that used in the main supply rectifier circuit. Also some

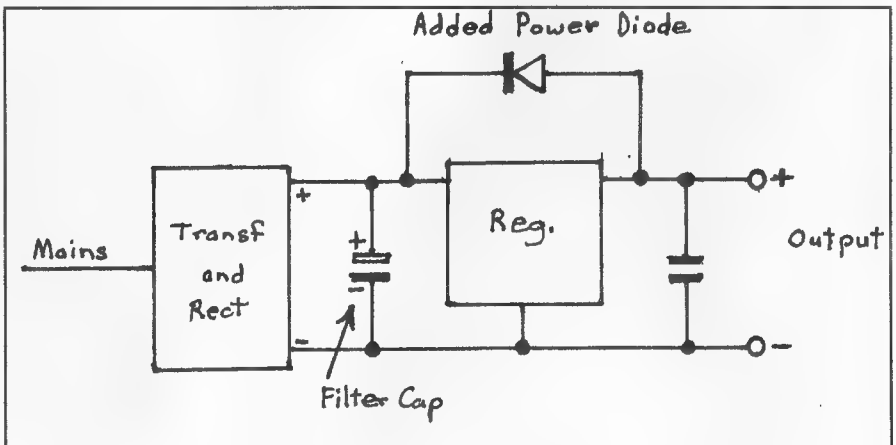


Fig 2. Skeleton Regulated Power Supply Circuit Fitted With Diode Protection.

regulated supplies have two rectifier circuits with one supplying the output and the other supplying regulator circuitry. In such supplies two diodes may be needed in order to charge the two filter capacitors. See Fig 3. Many transceiver DC supplies are of this type. The DSE 20 Amp adjustable supply cat D3800 that many use as a power supply has a separate supply for the regulator circuitry.

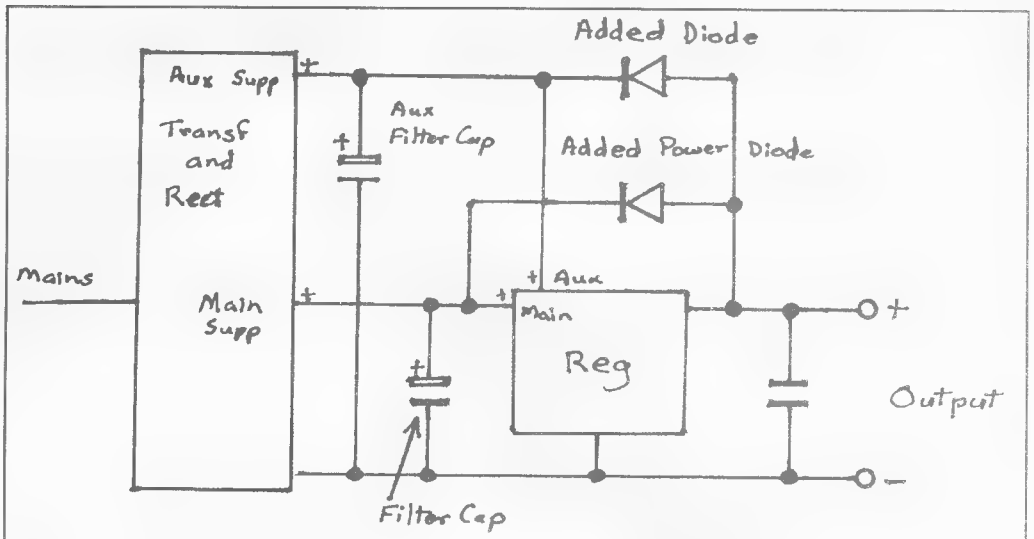


Fig 3. Skeleton Regulated Power Supply with Aux Regulator supply fitted with diodes.

A word of caution regarding ratings of regulated supplies is required as many amateur supplies are not continuously rated. SSB transceivers need a supply which delivers a few Amps continuously but only needs to supply full output for a short time. When charging a battery you can cause overheating of the supply as a dead flat battery will take a high current for a long time. You may have to readjust the current limit to a lower figure to handle this situation. Use a figure below the manufacturers continuous current rating to be safe.

I have used a supply fitted with the diode protection successfully but with the current limit adjusted to around 5 Amps as this was appropriate to the battery used and the power supply rating. The battery can supply the high current peaks which the transceiver requires as they are of short duration.

The current limit is determined by a resistor which the regulator uses to sense the output current. Depending on the regulator used the current limit operates when the voltage across this resistor is 0.3 V to 0.6 V. The resistor is usually a power resistor or combination of power resistors. A skeleton circuit is shown in Fig 4. For a 20 amp limit and an 0.6V sense voltage the sensing resistor would be 0.03 Ohm. To lower the limit identify the resistors and substitute appropriate values for the limit you want. For the example given 0.06 Ohm would give a 10 Amp limit and 0.12 Ohm would give a 5 Amp limit. You could switch between the lower limit and the higher limit if desired. Remember that the battery charge rate should be at the manufacturers recommendation. This will be the 10 hour or 20 hour rate. For a 70 Ampere Hour battery this is 7 Amps or 3.5 Amps respectively. Most transceiver type supplies will struggle at 10 Amps continuously for an extended period.

This article originally appeared in a slightly different form in WICEN NEWS the WICEN (Vic.) Inc. News Bulletin.

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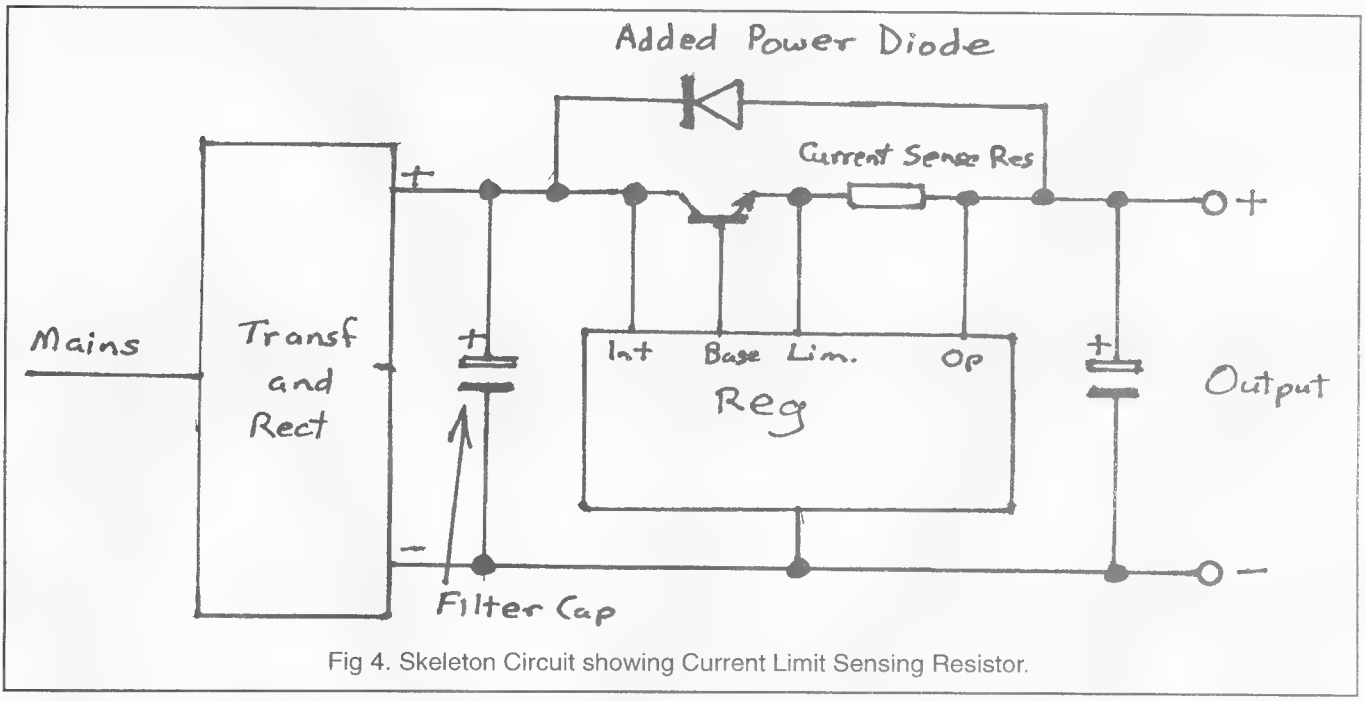


Fig 4. Skeleton Circuit showing Current Limit Sensing Resistor.

An Active Loop Converter For The LF Bands

Lloyd Butler VK5BR

Localised noise interference is a common problem in receiving signals on the Low Frequency (LF) bands. To minimise this noise there should be two essential features incorporated in the LF front end.

The two essential features are

(1) A sharply tuned circuit at the LF frequency. This limits both high level noise and strong signals on other frequencies from cross modulating the desired signal in the following mixer stage. The sharper the tuning, the better this is achieved. Unfortunately many LF converter circuits have broadband front ends.

(2) Use of a tuned loop antenna. Localised noise predominates in the electric component of the noise field. The small loop picks up the magnetic component of received signal and is insensitive to the electric component of the noise field.

Furthermore, because of its directivity, the loop can be rotated to enhance the level of the desired signal relative to other signals or noise which come from a different direction. Also because the loop null is quite sharp, this can be positioned in the direction of the unwanted signal or noise to some advantage. (Reference 1 gives more information on the loop theory).

In the converter which is described, a loop antenna is used as the only tuned inductive element with *positive feedback* applied to increase its effective Q and sharpen up its tuning. This of course is the old trick called *reaction* or *regeneration* used in the early days of TRF receivers to improve selectivity.

With the adjustable reaction control set to a stable point just below the point of oscillation, Q factors of between 1000 and 2000 are achieved. This means an effective 3db bandwidth of around 100 to 200 hertz at 200 kHz.

A switch selects a choice of three frequency bands. The loop specified has an inductance of about 500 uH and using this loop the bands are as follows:

Band 1	**195 to 490 kHz (includes the aeronautical homer beacons)**
Band 2	**150 to 220 kHz (includes the New Zealand amateur band)**
Band 3	**128 to 160 kHz (includes the European amateur band).**

For the following discussion on circuit detail, refer to figure 1 on facing page..

The Frequency Converter

The mixer stage employs the now universally used NE602 package (N2), the output of which is fed to the input of a HF receiver. One way to operate this stage is to operate its local oscillator in a tuneable mode with the output as a fixed 1st Intermediate frequency (IF) fed to the receiver.

That system, which I used in a previous converter (reference 2), necessitates the calibration of the local oscillator tuning dial in terms of the incoming LF. In this new converter, I have made use of the idea that Drew Diamond (VK3XU) used (see ref. 3).

The local oscillator is crystal locked on an even multiple of Megahertz and the 1st IF varies with the incoming frequency so that the receiver is tuned over a range equal to the MHz frequency plus the LF. If the receiver is accurately calibrated, the calibration is simply read off on the receiver dial (or digital display) ignoring the MHz.

In this system, the received frequency at the input of the converter is determined by the frequency tuned on the HF receiver.

For the calibration to be correct, the oscillator MHz frequency must be accurate. Drew used a frequency of 3 MHz. I had available a 3 MHz cheap ceramic crystal and a 4 MHz quartz crystal in the HC25 holder. I started off with Drew's circuit values but found both crystals oscillated at far too low a frequency making the receiver calibration a long way out. (This gets back to the fact that crystals are made to suit a particular circuit constants and when ordering a crystal one should always specify the circuit with the order).

Anyway I settled on the 4 MHz crystal and trimmed my circuit values to make my crystal oscillate on the right frequency (refer values of C16 and C17 in figure 1).

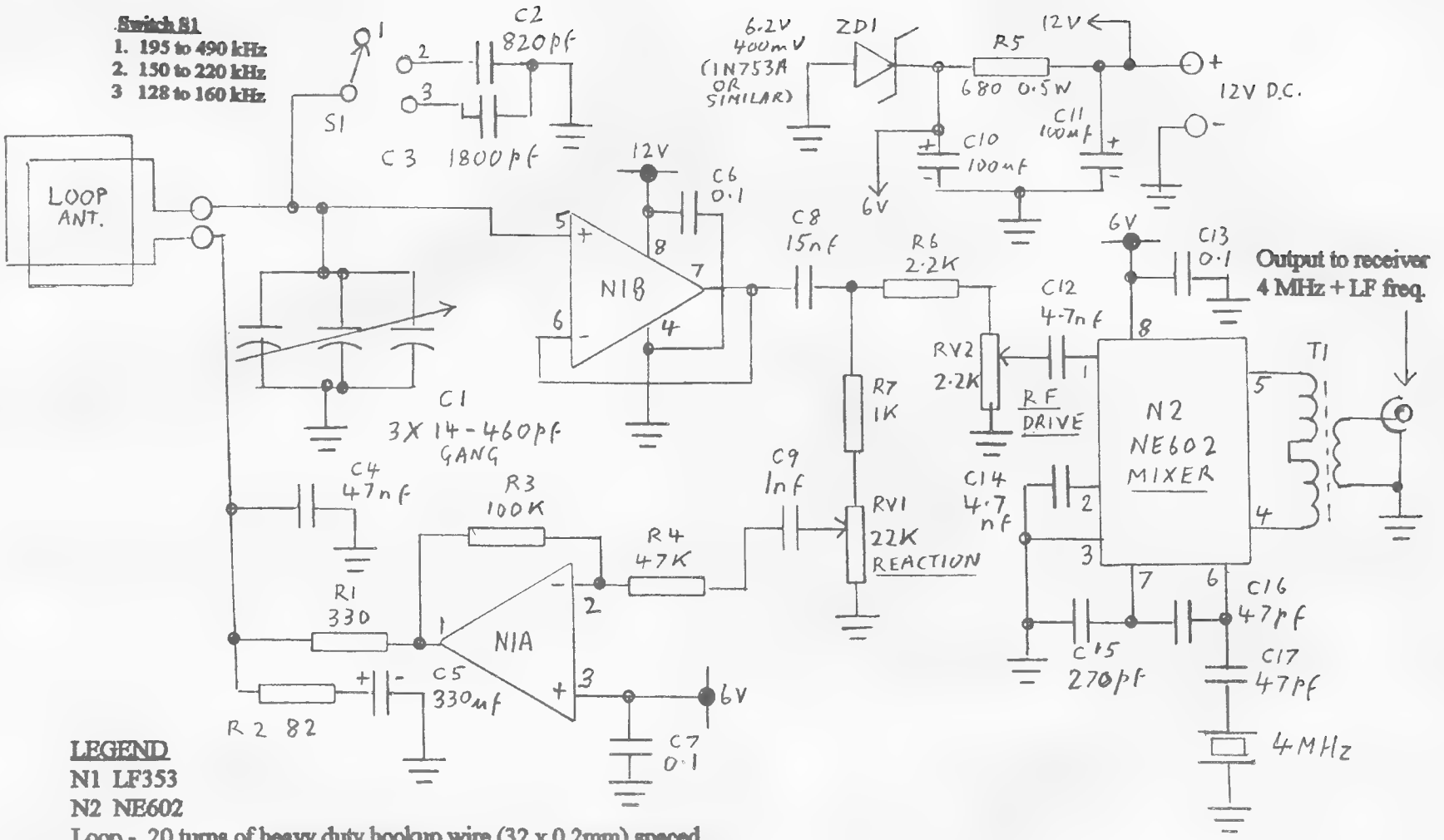
I must point out that the value of these capacitors might not be quite right for some other random crystal.

The Loop

The loop (figure 2) has been successfully used in conjunction with other receiver arrangements and has been mentioned before in my previous articles on VLF/LF in AR. It consists of 20 turns of 32 x 0.2mm hook-up wire spaced laterally 10 mm apart on a wood frame 0.8 metre square.

It works fine indoors and is connected to the converter via 2 metres of figure 8 flexible cable. For other receivers, coax cable was used with the cold end of the loop at earth potential. However in this receiver, the feedback signal is fed in series with the loop and the colder end of loop is at an RF potential a little above ground level.

The only difficulty I have experienced indoors with the short cable is noise from the fluorescent lights. So I just turn these off. The cable can be extended so that operation is possible outdoors but the extra cable capacitance will limit the



LEGEND
N1 LF353
N2 NE602

Loop - 20 turns of heavy duty hookup wire (32 x 0.2mm) spaced 10mm apart on a 0.8 metre square wood frame.
Loop is connected via 2 metres of Figure 8 flex cable.

L1 - 10 turns trifilar wound on a suitable ferite toroidal core (core used was a philips 97050 9mm core mu = 5000).

FIGURE 1 ACTIVE LOOP L.F. CONVERTER

Circuit Diagram

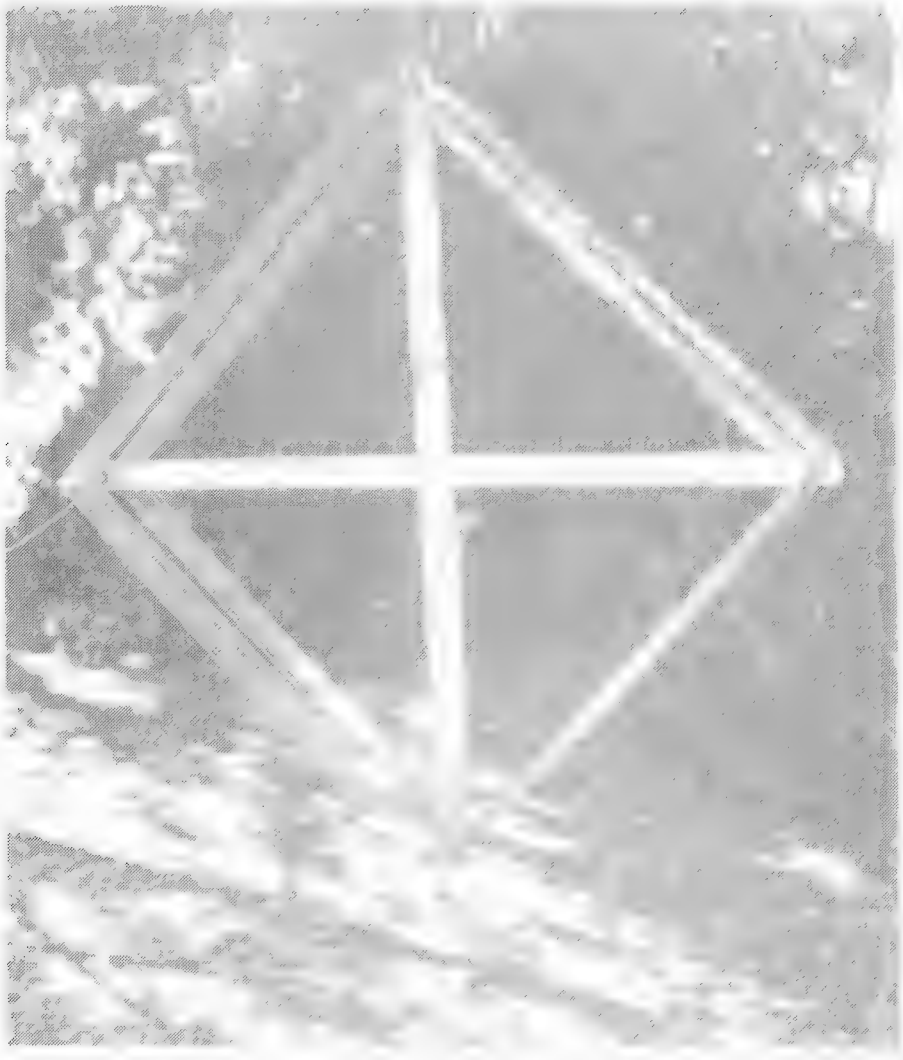


Figure 2 The Loop Antenna

maximum tuneable frequency on band 1. There seems to be little advantage in hanging the loop more than a metre or so above ground or floor level. If kept well clear of surrounding objects it works fine.

The minimum frequency on band 1 is set by the maximum capacity of 3 gang tuning capacitor C1. The maximum frequency on band 1 is set by the loop inherent capacitance plus its feed cable capacitance. The actual minimum and maximum frequencies are of course also controlled by the inductance of the loop. The frequency range is extended downwards by switching in capacitors C2 or C3. Addition of this capacitance to lower the frequency progressively reduces the range achievable by the adjustment of C1.

With the feedback adjusted for high Q, the tuning is very sharp and a vernier drive coupled to C1 is desirable.

The Loop Interface and Feedback Circuit

The loop is interfaced by one half of twin MOSFET opamp LF353 (N1B) which operates as a voltage follower and which presents a high input impedance across the loop.

A portion of N1B output is fed back into the loop across capacitor C4 via the second half of the opamp N1A. The amount of feedback or reaction is controlled by the setting of potentiometer RV1.

The circuit is an adaptation of a circuit used in a previous simple VLF/LF receiver which I constructed (ref. 4). The reason for the inclusion of R2 might not be too clear but it was added to the circuit in the earlier receiver to stop some undesirable effects caused by the rise in impedance across C4 at very low frequencies..

The output of N1B is coupled to the input of mixer N2 via drive control potentiometer RV2. This was included so that the RF drive could be reduced in the event of strong signals reaching the mixer input at sufficient level to cause cross modulation. The NE602 package has a fairly low third order intercept point which means intermodulation products can easily be produced at moderately high signal levels. (This was discussed in a previous article, reference 2).

The signal levels induced into the loop are much lower than for a long antenna wire and in the practical testing out the unit, I didn't actually notice any problem here. For my location, RV2 might well be an unnecessary inclusion but it could be needed if the converter is operated a bit closer to a local station.

Powering

The converter operates from a 12 volt DC supply which directly feeds the dual opamp N1. A 6 volt rail is derived with zener diode ZR1 and R5 and this is used for mixer N2 and to centre set the operating points of amplifiers N1A & N1B. The 12V load current is around 13mA. I operated the unit from a bench power supply but with that load current, a 12V bank of AA cells could be used.

Construction

At these low frequencies there are no real problems of lead lengths or inter-circuit coupling.

Minor components (integrated circuits, resistors and capacitors) were mounted on a piece of blank experimental circuit board made for DIL packages. A aluminium box housing the components had to be large enough to accommodate the three gang tuning capacitor and the large dial of the re-cycled vernier drive I coupled to it.

Almost any connector can be used for input and output. I used a twin REC socket (a twin version of the PL259) for the loop connection and a BNC connector for the 4 MHz output.

There is also nothing very critical about the design of the toroidal output transformer T1 and in fact the one I used could do with a few less turns on the secondary to suit the expected low input impedance of the usual HF receiver..

Operation and Tuning

Procedure is as follows: Connect the output of the converter to the HF receiver via a shielded line (coax cable or shielded wire). Hang the loop in a free space and connect its lead to the converter input. Connect the 12V supply and apply power.

Set the receiver tuning to 4 MHz plus the required LF frequency. Set the RF drive control to maximum. Ensure that the Reaction Control is set well below the point of input stage oscillation. (With a little practice one can recognise sounds from the receiver which indicate the oscillation point).

Rotate the loop tuning control (C1) for maximum noise from the receiver. Advance the reaction control as far as possible in the stable state below the oscillation point. Carefully check that the loop tuning is set at the centre of its resonance peak. If a signal is available on the tuned frequency, the peak could be indicated by maximum reading on the receiver signal strength meter. (There are plenty of aeronautical beacon (NDB) signals available for a test).

Rotate the loop antenna 360 degrees and the signal can be heard to fade in and out as it passes through the two peaks and the two nulls of the loop radiation pattern.

It should be noted that if the reaction control is advanced to the point of oscillation, the loop aerial can operate in reverse to radiate a signal at the frequency of oscillation. However this is not too much of a worry as the radiation resistance of the loop is so low that almost all of the energy generated is consumed in the loss resistance of the loop.

One could expect that the signal would be of such a low level, it would hardly be detectable over the back fence.

To quote some figures, I have calculated the radiation resistance of the loop to be close to 1 micro-ohm. The RMS voltage developed across the loop in the state of oscillation has been measured as a little less than 5V. The reactance of the loop at 200 kHz is around 600 ohms so that for 5V, the current through the loop is 8.3 mA.

Power radiated is this current squared times the radiation resistance which gives a power radiated of 68 micro-micro-watts, quite an insignificant figure. However, to minimise possible localised interference, one should avoid operation in the state of oscillation.

Performance

Correctly tuned up the converter separates weak signals out of the noise as good as anything I have tried out at my location. The only limitation is that is difficult to quickly scan the band with the front end so sharply tuned.

It is really a two hand operation. One has to track the tuning with one hand at the converter with. the other at the HF receiver. If we know what we are looking for and know the frequency then there is no problem.

From the loop formula (ref.1) my loop is calculated to give an induced voltage of 0.05 uV per uV/metre of signal received at.200kHz. This is multiplied by the Q factor of the loop at resonance. Assuming an effective Q of 1000, the voltage at the input of amplifier N1b is 50 uV per uV/ metre of signal at 200 kHz.

The conversion transfer ratio between the input of N1b at 200 kHz and the mixer output at 4.2 MHz was measured as 0.15 into a 50 ohm resistive load and 0.75 loaded into my FRG7 receiver input (obviously the antenna input impedance of the FRG7 is much higher than 50 ohms at 4 MHz).

From the above, when the loop feedback is set for a Q of 1000, the converter sensitivity at 200 kHz is 7.5 uV of converted output per signal strength of 1 uV/meter when the output is loaded into 50 ohms. Loaded into the FRG7 receiver, the figure is 37.5 uV per uV/meter.

Summary

A simple LF converter has been described which tunes the range of 128 to 490 kHz. This includes the bands allocated to European, British and New Zealand radio Amateurs and the Australian/New Zealand aeronautical non directional beacons.

The converter makes use of the noise reduction features of the small loop antenna which essential operates on the magnetic component of the received EM wave to the exclusion of the electric component which is predominant in local noise.

The loop is the only tuned element in the unit and feedback (or regeneration) is applied to the loop circuit allowing an increase in Q factor to around 1000 to 2000. This narrows the bandwidth, improving the adjacent channel rejection and reducing the susceptibility of the the mixer stage to cross modulation from strong unwanted signals and high level noise.

The mixer oscillator stage is crystal locked at 4 MHz so that the host HF receiver is simply set at 4 MHz plus the LF frequency. The LF is simply read on the receiver calibration ignoring the 4 MHz.

References

1. Lloyd Butler VK5BR - VLF-LF and the Loop Aerial - Amateur Radio, August 1990.
2. Lloyd Butler VK5BR - The bandwidth Limiting LF Converter Simplified Amateur Radio, January 1994.
3. Drew Diamond VK3XU - Simple LF Converter - Amateur Radio. December 1995
4. Lloyd Butler VK5BR - A Simple Regenerative VLF-LF Receiver Amateur Radio, January 1992.

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TECHNICAL ABSTRACTS

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Long Wire for Six and Ten

A long wire antenna which covers both six and ten meters and is coax fed was described in QST April 2000. The author was Bob Witmer W3RW. The antenna is three wavelengths long on ten metres and five wavelengths long on six metres. The antenna is end fed a quarter wave from one end using two quarter wave sections made from ladder line and using a common long wire section.

The antenna is shown in fig 1. A dual matching section of 75 Ohm coaxial cable is used to convert the feed impedance to 50 Ohm on both bands. This is basically a quarter wave section on each band together with a number of half wave lines. A balun is made by coiling four feet of coax into a four turn coil adjacent to the feedpoint. This is a simple current balun.

The antenna is made of a common long section of 96 feet 6 inches long and a dual band quarter wave section made out of 450 Ohm ladder line.

The coaxial matching line and balun is made out of RG59 solid dielectric coaxial cable with a velocity factor of 0.66. The length of 29 feet provides a quarter wave matching section on both bands together with a 2 wavelength line on 50.15 MHz or a 1 wavelength line on 28.35 MHz. The line acts as a matching line on both six and ten metres. Other types of coax can be used but watch the velocity factor and watch out for some foam types which dont like being coiled up or being suspended.

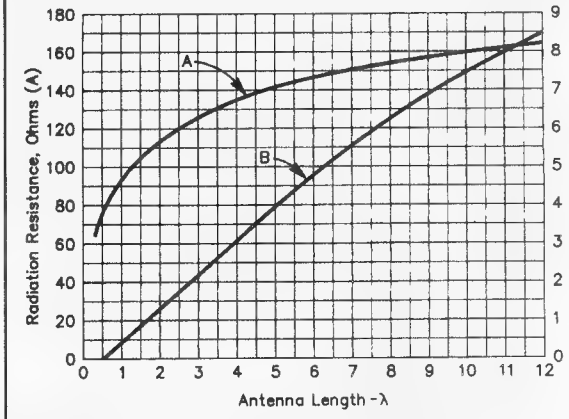

Figure 1—The variation in radiation resistance and power in the major lobe of harmonic (long-wire) antennas. Curve A shows the change in radiation resistance with antenna length, as measured at a current loop, while curve B shows the power gain in the lobes of maximum radiation for long-wire antennas as a ratio to the maximum of a ½-λ antenna.

Fig 1.W3RW Dual Band Long Wire Antenna.

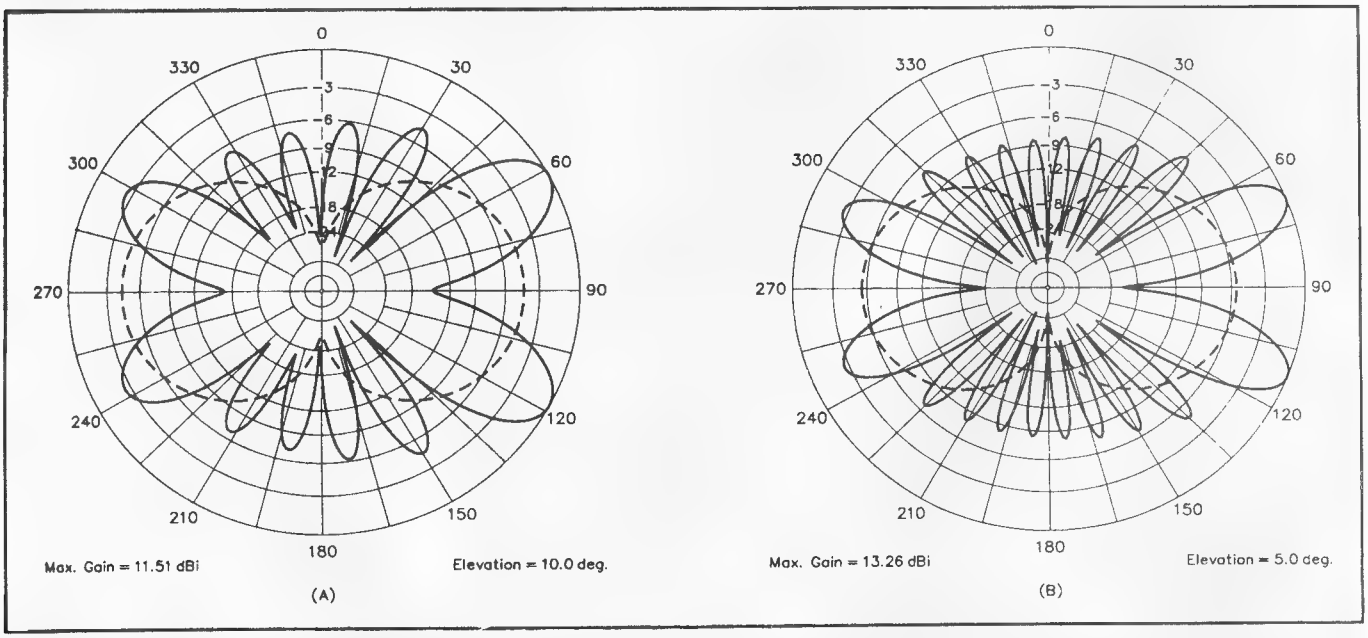

Figure 2—Predicted horizontal radiation patterns of a long-wire antenna as a function of length. At A, pattern of a 50-foot-high 3-λ long-wire antenna (solid lines) compared to that of a dipole (dashed lines). At B, pattern of a 50-foot-high 5-λ long-wire antenna (solid lines) compared to that of a dipole (dashed lines). *Tnx Dean Straw, N6BV*

Fig 2. Predicted Horizontal Radiation Patterns. (A) Pattern for 28.35 MHz. (B) Pattern for 50.15 MHz. Antenna is 50 ft high.

The antenna is adjusted by first adjusting the quarter wave sections and then the long wire section to minimise SWR on both bands. Then recheck the quarter wave sections. A few iterations should be sufficient. If the coaxial matching section is cut carefully it should not need adjustment. The author took the precaution of checking the velocity factor of a sample by checking the length and velocity factor of a quarter wave sample with a dip meter.

The expected patterns are shown in fig 2. These are calculated patterns and the author Bob W3RW thanked Dean Straw N6BV for his assistance with these. The patterns are for an antenna height of 50 feet. The estimated gain in the main lobe is 4 dBd on six and 2 dBd on ten. There are a number of lobes and the main lobes should be arranged to point in directions of interest. Gain figures can be a bit confusing with ground reflections and other factors. The gains in fig 2 include some other factors. The main thing is that this antenna offers some gain and a good match on two bands.

Homebrew ESD Mat

A simple homebrew ESD mat was described by Billy Van Remmen KA2WFJ in the Hints and Kinks column of Bob Schetgen KU7G in QST January 2000. The mat is used when working on static sensitive semiconductors and allows static charges to be drained away before they damage the semiconductors.

The mat is made from a piece of masonite. The masonite is then coated with a conductive solution made from Indian Ink and rubbing alcohol. The ink uses carbon as its pigment and is widely available. Bill used Rapidograph 3080-F ink but other brands would also be suitable. The ink used by Bill is waterproof when dry. He diluted the ink with two parts rubbing alcohol to one part ink to thin it and to make it soak into the masonite more readily. The mixture was spread about the masonite with a piece of Scotchbrite or other non absorbing material until the entire surface had an even black coating. You should wear rubber gloves when doing this and protect the work surface and surrounds as the ink mixture will stain anything it touches.

When dry the board surface should measure between 100 kOhm and 1 MOhm between any two points on its surface.

The mat is grounded by drilling one corner and attaching a solder lug in contact with the surface using a machine screw and nut and metal washer. A wire is run to a good DC ground. You can also make provision for attaching a wrist strap but make sure it is one with a high resistance in series.

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ALARA

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ALARA Annual General Meeting(s)

This year due to problems with the timing of the auditor's statement, ALARA had two AGMs

Nevertheless there were just as many present the second week as there had been on the first occasion. Our AGM is always held on air and always attracts a large number of members. This year we had 17 members from almost every state in Australia. If we count the apology from VK1YL we could say we did have at least one YL from each state!!

This year we have a new President, Bev VK4NBC and the following exectutive committee members:

Vice President - Robyn VK3WX
Secretary - Margaret VK4AOE
Minute Secretary - Bron VK3DYF
Treasurer - Bev VK4NBC
Souvenir Custodian - Gwen VK3DYL
Publicity Officer - Christine VK5CTY
Editor - Dot VK2DB

Assisted by

Awards Custodian - Jean Shaw
Contest Manager - Marilyn VK3DMS
Sponsorship Secretary - June VK4SJ
Librarian - Kim VK3CYL
Historian - Tina VK5TMC

and our important State representatives

VK1/2 - Dot VK2DB
VK3 - Judy VK3AGC
VK4 - Margaret VK4AOE
VK5 - Jean VK5TSX
VK6 - Poppy VK6YF
VK7 - Helene VK7HD

As you can see there is one gap. We need a Junior Vice-President. If you would like to do something to help amateur radio and the YL amateurs in particular, please offer your services. With such a scattered membership it is not always possible to tell someone nearby that you are interested so they can nominate you so you may have to put yourself forward.

The position of Junior Vice-President does progress eventually to that of president but you will probably have six years to wait for that in which you will realise that there is little to fear at that prospect. From personal experience I can assure you the position of President of ALARA is a pleasurable one. You have the opportunity to meet some lovely people and to make many new friends.

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URUNGA RADIO CONVENTION APRIL 2000

The morning dawned clear and fine, that is the 2lst of April Two Thousand and a signal was sent to the force above the E layer to let the next two days be fine and bright.

The message was received and answered with two perfect days for the 52nd Urunga Radio Convention, April 22-23rd. A good roll up registered for the two days and two VK3s, Brian VK3YNG and Adam VK3HDF, were also in attendance.

The first event a 7MHz mobile hunt was won by Geoff, 2BYY, followed by a 2 metre pedestrian hunt, won by Brian, 3YMG, second Adam 3HDF. After lunch a three TX hunt, mobile was won by Adam 3HDF, second Ken 2DGT. The final event, mobile talkin, was won by Rod 2URK second Chris 2YMW. Following dinner at the Ocean View Hotel Neil 2EI showed several tapes and talked about Hillarys push to the south pole and his time in Antarctica. He has indicated there will be more of this next year. A cake was produced to celebrate the 52nd Convention and the year 2000, it was cut by Brian and Adam, following the cutting of the cake supper was served.

Sunday was bright and fine, the 40 metre fun event went to Chris 2YMW, Urunga scramble, Johnathan, 2HJJ, the three TX, two metre mobile hunt, went to Adam 3HDF, second Ken 2DGT. After lunch the three TX pedestrian hunt, 2 metre, went to Paul 2KKT, second Brian 3YNG. Fun event talkin hunt, two foxes on two metres, won by Chris, 2YMW second Dominic 2YGD.

Special events on 80 metres and 2 metres were run for the next generation of amateurs with the winners being, Saturday. Rebecca Lindsley, Sunday, Sara Piper, the juniors appeared to enjoy themselves and next year the events can be a little more sophisticated as they will be a year older and more experienced.

The overall winner for the two days was Adam 3HDF,and the winner of the Jack Gerard award, winner of 3 events, Adam 3HDF.

Raffles, contests and pick the spot, as well as other events, were contested and won, longest distance travalled.3YNG and 3HDF. Oldest amateur, Bob, 2AWA.

The committee hopes that all who attended the Convention enjoyed the weekend and that they will be there for the 53rd Convention in 2001.

Best 73a from the Urunga Radio Convention Committee. Per B.Slarke, VK2ZCQ.

Brian VK3YNG and Adam VK3HDF with trophy and shield

Adelaide Hills Amateur Radio Society Notes

The talk given by Jerome van der Linden in May was less technical than usual but very interesting. Jerome's interest in radio is short wave listening rather than the operating type interest of amateurs. It is an interest he has held since childhood. He had some radios with him to show us. Those radios and some of the stations Jerome mentioned were very familiar to many of our members.

Jerome had many stories to tell but the one that made the most impression was his experiences in Riyadh immediately before and at the beginning of the Gulf War.

Jerome actually shared his radio listening with the other Europeans in their compound. There were only a few programs on local radio in English but Jerome had access to the Radio Australia, the BBC and Voice of America through his SW radio. He set up the system to pipe the output from his radio into the compound loudspeakers so everyone could share it and to change frequency at particular times to obtain different stations and programs as propagation changed. There is nothing like news from home to keep up the morale.

Jerome's on-the-spot description of the Rapier missiles going through the sound barrier as they sped on their way to destroy incoming rockets was very graphic. Few of us had realised that, of course, something like a Rapier must be travelling this fast to reach it's target. Even after you knew what it was, the noise of several being sent off one after another was just as bad as the sound of bombs falling nearby.

News from the Moorabbin & District Radio Club

MDRC hamfest successful

This year's hamfest, held on May 13, was another success for the MDRC. More than 500 people were present at the event. Patrons and traders alike seemed well pleased with the day.

The door prizes were a hit, with a 2000 ARRL Handbook, giant squid pole and a year's MDRC membership being awarded to lucky attendees. The squid pole seemed to go on forever, as our president Lee VK3GK telescoped it out over the watching crowd.

Thanks go to Wally VK3JWH and numerous club volunteers for their work for making the MDRC hamfest Melbourne's best.

Missing treasure found

Some months ago, your club committee voted on us procuring a suitable club banner for use on such occasions as Hamfests, hobby shows, and field days.

Professional quotes for banners were around $120. However, Bill VK3ATW reminded us recently that we already had a banner. It was specially made by Mary, the XYL of one time Club member, George Hoddinott, VK3AYI.

Whilst it had been an odd year or three, we decided to enquire what had happened to this wonderful Club relic. Well the good news is that the banner was found. It appears to be in remarkably good condition.

A full inspection of the lost treasure will be done this week, and we'll let you know of further developments on *APC News*. Not only will this be a valuable cost saving for the Club, but, perhaps history can be revisited through the old MDRC banner once again flying high and proud.

APC News live on the web

APC News become even more accessible thanks to a live internet relay service that commenced on May 31. The new service, conducted by Tony VK3JED, allows people to hear the news live on their internet-equipped computers. Callbacks to the inaugural webcast were received as far away as Sydney. Though the news text had been available via the World Wide Web and direct e-mail subscription, this is the first time that listeners could tune in to the live transmission without possessing a VHF receiver. We expect that the internet service will be especially popular with newcomers to amateur radio and those living beyond the service area of our VHF transmissions.

To access the live audio, you need to be running Internet Explorer 4 or later, or Netscape 4.08 or later, running under Windows 95, 98, NT or 2000. Point your browser to http://www.qsl.net/vk3jed/repeater.html, and the audio software will start installing itself. It is a good idea to do this a little prior to the 8:00 pm news starting time so you don't miss the first part of the bulletin.

In other developments at *APC News*, a new six metre service has commenced for the benefit of listeners living in the Latrobe Valley. The relay is conducted by Graeme VK3GRL on the VK3RDD repeater on 53.575 MHz. The VK3RDD repeater is sponsored by the Gippsland Gate Radio and Electronics Club. The MDRC thanks the GGREC for the use of VK3RDD for the news relay.

Readers can also receive *APC News* via free e-mail subscription. The news is sent each Thursday morning. Close to 70 people have now availed themselves of this increasingly popular service. Follow the links from the MDRC webpage (www.mdrc.org.au) for information on how to subscribe.

The main news transmission continues to be on 146.550 MHz at 8:00pm each Wednesday. We have been pleased at the steady increase in callback numbers over the last month. Those with contributions for the news (hint: Ham Sandwich ideas particularly welcome!) can e-mail Keith VK3JNB at keith@lcd.net.au or myself at the address given at the end of this item.

Don't forget the net

With the end of daylight saving, the MDRC's Monday night net now includes 80 metres as well as two metres. Tune to 146.550 MHz from 7:30pm and 3.567 MHz LSB (+/- QRM) after 8:00pm for the 80 metre net. Net control is our station officer Tony VK3CAT.

Peter Parker VK3YE, Publicity Officer, Moorabbin & District Radio Club parkerp@alphalink.com.au (03) 9569 6751

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Dayton Hamfest diary

The Greatest SHOW on Earth

73 Phil Miller VK2FHN

If you ever get the chance, you must go to the world's biggest Hamvention, The Dayton Hamvention and ARRL National Convention at Dayton OHIO U.S.A.

I was asked if I would like to go to Dayton, back in December 1999, with Gerry VK2APG, and of course said yes, with no hesitation, so flights and hotel accommodation were booked, just had to save up now.

The trip started out early at 5.30am on Tuesday 16 May, making sure that my case was packed, camera, film. Passport, airline tickets and money in pocket and of course my 2m.70cm hand held radio, which I left at home last time I left Australia. Gerry arrived about 7.30am, had coffee and a final check, then it's on our way to Sydney airport. After getting checked in seats organised and bags checked we were off to the airport Maccas for breakfast and walk around the duty free shops and relax. It was soon time to go through customs passport checked out okay but I always manage to set off the security scanners when walking through, security have decided that I must have metal legs.

The 747 jumbo that we were flying on was only half full so we had plenty of room to stretch out with a full row of seats to ourselves. After fourteen hours, a different hemisphere and time zones we landed in Los Angeles International for a plane change. This was supposed to be a two hour change over, but managed to be a four hour delay, it seems that the Pilot for that particular flight had taken a sickie!! Finally we were airborne once again with a three hour flight and another time zone from LA to Chicago O'Hare Airport, which is on the edge of the great Lakes, near Lake Michigan, now that's some Airport, being the second largest and busiest in the world.

We managed another two hour delay and plane change then off to Dayton, this being a short flight of forty-five minutes and yes another time zone. On arrival at Dayton we soon caught a taxi over to the Marriott Hotel at around midnight on the 16 May even though we had been travelling for nineteen hours.

After a good nights sleep and a hot shower it was downstairs for an all American breakfast which went down very well. The service at the hotel was first class.

Wednesday was spent at the National Air Force Museum, where we saw the first plane that was built by the Wright Brothers, the Kitty Hawk, plus WW1 And WW2 war planes and every plane ever built by the US Air Force, from B52 bombers to the Stealth fighter, there was also a MIG from the USSR plus Space Capsules. We also saw a couple of movies on the Imax Theatre in the museum which is all free admission apart from a small charge for the Imax. After a good day it was back to the hotel for Dinner and a beer or two.

Thursday was spent at a Historical village of Dayton's past history, this was within easy walking distance of the hotel. It included the first house built in Dayton, the school and many other buildings each with it's own guide that would give a short talk on the past history of the building. In the afternoon we walked into downtown Dayton.

The population of the City of Dayton is half a million, with at least half of them Black American.

It was back to the hotel to meet up with some of Gerry's friends that were travelling from out of town to Dayton for the Hamfest and were staying at the same hotel. These guys have a stall in the Hamvention flea market with the other three thousand six hundred and eleven outside stalls. Andy WB8HYO, Dave KE8KT and Michael W1DRY, a great bunch of guys who were on the same floor in the hotel, along with many other Hams from the States, Brazil, Argentina and Australia. These guys also ran us to the Hara Arena Exhibition Centre and back for the next three days.

At last it was Friday the day Gerry and I had been waiting for since we arrived – the start of the Hamvention. It was an early breakfast, we needed to be at the exhibition centre to help the guys set up their flea market stall and get our tickets which were a three day pass. At 9am the doors to the 49th Dayton Hamvention opened and we were in the queue with some of the thirty thousand hams and visitors who for the next three days walked through the exhibitors and flea markets. Where do we start!

This really is a very big exhibition with six hundred and fifty-seven exhibitors all under cover in the arena and conference halls. All the major manufacturers of Radio, Yaesu, Icom, Kenwood, Alinco and franchisees from different US States displaying and selling the same products. All the commercial and small antenna builders, Cushcraft, Gap Antenna Products, Hy-Gain, Hustler etc, etc.

All the linear amplifier builders plus our very own Emtronics Pty Ltd from Sydney, MFJ Heil sound, Kentronics and Radio Shack just some of the suppliers of extra accessories related to the hobby. Kachina, Winradio, Timewave and other computer related products were in abundance. There were many organisations in attendance, ARRL, RSGB, G.QRP Club and 10-10 International, which myself and Gerry are members, plus the Ford Motor company, also lot's and lot's of software for the computer users.

J and W Software, QSL shop (make your own QSL card) lots of Login programs DX4Win, Writelog and satellite tracking of course. Amsat had a large booth in one of the halls. There were many new products and radios on display.

Over the next three days there were many forums covering Packet, QRP, Radio and the Law, Antenna technology, Dxing, Contesting and an ARRL forum of Meet the President.

Gerry and myself had been invited to the VHF weak signal group banquet on the Friday evening, more on that later. So a check in the Hamvention brochure, which is fifty-five pages, to see which forums to attend. We decided on antenna technology which was at 2.15, the speaker, well known Dxer John Devoldere ON4UN, and at 4.15 the forum was the 10-10 International Group, with President K4CIH, Tom Henderson the speaker.

Okay lets go Shopping! Before we come back for these.

A quick check of all the retailers booth's and pick up on some of the giveaways, Badges, lapel pins and small laminated maps with dealer names all over them. There were lots of Brochures on display, but these did not last too long, only for the first ten thousand through the booths, there was so much to see and look at over the next three days.

I lost count of the number of times we were stopped and asked "have you come all the way from Australia for the Hamvention", or " I know that call, I have spoken to you on the HF bands, I must admit some of these I remember some I didn't".

By this time it was getting round to the time for us to attend the first forum we wanted to go to, they had three large rooms set aside for these forums for the convention, ON4UN spoke on the subject, getting the most out of your vertical antenna, also HF ground radial techniques, this mainly on the low bands. Then Dr Steven Best VE9SRB spoke about wave reflections and impedance matching, this was very well presented, interesting and informative. Once this was over we headed off to find room 2 for the 10-10 forum. We were introduced to the room and members as being the furthest DX, needless to say this was also another well presented forum for those interested in the current and coming events of 10-10.

It was now time to be back in the flea market area to help the guys pack up their stall for the evening and travel back to the hotel, freshen up, a change of clothes for the VHF dinner.

The Holiday Inn Hotel was the venue for the VHF banquet that started about 6.30, in total there were one hundred and sixty five guests, at the start of the banquet each person would stand and give their callsign, name and grid locator. Once again Gerry and myself were deemed the best DX and were given a round of applause. We made many new friends and spoke at length with Dave Sumner K1ZZ of the ARRL and Tom Whitted WA8WZG who gave a talk at one of the forums on VHF/UHF Microwave on the Saturday. Both David and Tom were interested in what is happening with VHF 6m and HF in Australia.

The meal was very nice and was enjoyed by all, a prize draw was held with one hundred prize items ranging from 2m antennas and filters to callbooks. Toward the end of the evening there had been a great deal of Dxing done. Both Gerry and myself have been invited back to next year's hamvention dinner. Thanks to the VHF weak signal group.

Saturday was another early start 6.00am, down to breakfast then back in the van to the arena and help set up the stall for the day. Today was a little warmer so we decided to check the outside exhibitors, three thousand six hundred and eleven spaces are available most of them full. Row upon row of car boot sales Campervans, trucks and stalls some covered some not.

Everything on sale from hundred foot towers to PL259's. New and used equipment, computers, from complete systems or build your own. Badges with your callsign could be made, T-shirts printed or callsigns sewn onto baseball caps. Didn't think we would get around it all plus being stopped and spoken to.

We also had plans for another forum today and to meet up with some other VKs at about 3.30. The Amsat forum was to start at 12.15, which we attended and listened to speakers on the subjects of, getting started on Satellites and "Phase 3-D spacecraft and launch status". After the forum we were to meet at the CQ magazine booth with VK3EW David a well known Dxer from South Australia, VK1TX Tex who is often heard on 14.226.5 helping to run the Southern Cross DX net most evenings, Kerry VK4MZ and Graham VK2FA from Newcastle, we all spent the next half-hour talking about who and what we have seen and done. Had photo's taken with Dxer's from Brazil and the states and talking DX, needless to say another good day was had by all at the Hamfest.

On Saturday evening it was down to the Crown Plaza Hotel in downtown Dayton, the function was the Contest Super Dinner and Presentation, we were unable to attend the actual dinner as tickets had been sold out twelve months ago but we did attend the get together later in the evening, I must say that we felt like little pistols there with all the big guns, but we eyeballed with many of them and everyone was made welcome.

Sunday was soon upon us and the last day of the Hamfest, and our last day in Dayton and the states. Once more we started out early to the arena checking out the prices and picked up any last minute bargains. "Did manage to pick up some goodies", we had a leisurely walk round the outside exhibitors, it was a little cooler today so not such a big crowd. Most were waiting for the grand prize draw, "BIG PRIZES" everything from full station HF rigs FT1000MP, mobile rigs from Yaesu, Icom, and Kenwood to 18 element yagi's for 440MHz plus antenna rotators to hand held radios.

Midday arrived and the time for us to leave for the airport and the trip home, we called by the stall of Andy WB8HYO and the boys to say our good-bye's and thank them for all their help and hospitality, and hope to see them next year.

We made our way to the main entrance with our bags and our new purchases to find a taxi for the start our journey back to Australia. The flight from Dayton to Sydney is very long but comfortable. We arrived back at 6.30am Tuesday morning tired but had had a great time.

I would like to thank Gerry VK2APG for the excellent company and help with our vacation.

My XYL Catherine being left at home, the boys in the states who ran us about and looked after us both. Also to the Dayton Amateur Radio Association for an excellent Hamvention.

It is the Greatest Show On Earth!

ar

The Handlebar and the Halo

Gil Sones VK3AUI

Omni directional horizontally polarised aerials are not very well known. They are useful for mobile operation or for monitoring. They are available from a few antenna manufacturers but are not widely available locally.

A horizontally polarised antenna is desirable to work stations in the SSB part of two metres. Most stations there are looking for weak DX signals and horizontal is the preferred polarisation. Horizontal beams are fairly simple mechanically to support. The cross polarisation to strong commercial signals in neighbouring bands aids in reducing their influence on sensitive front ends.

An omni directional antenna may be difficult to obtain but they are fairly simple to make. Absolutely circular patterns are hard to provide but a pattern within a dB or so is achievable. Remember this is much less than an S point and minuscule compared to the null off the ends of a dipole or off the back of a Yagi.

While the turnstile is well known and the cloverleaf design is capable of good performance there are other designs which are simple to make and work well. Two of these are the Handlebar and the Halo.

Handlebar Antenna

The handlebar or U dipoles was reported via VK6HK and VK3KWA as being used for Community FM Broadcast antennas. The design is similar to the Rams Horn or U dipole used 40 years ago as an aeronautical antenna by the Collins company and described in the Antenna Engineering Handbook by Henry Jasik 1st Ed 1961 published by McGraw Hill.

I built one using 3 mm galvanised steel fencing wire for the element. Even coat hanger wire would do. You must either bend the ends into loops or fit corks on them to provide eye protection. The wire bends easily into the U shape with each side about a sixth of a wavelength long. The wire is a half wave dipole length which is 960 mm for 2 metres. You are bending a half wave dipole into a U shape. I attached the element to the support using wire rope clamps. These are a small U bolt and saddle assembly and work well. The antenna is shown in Fig 1.

An omni directional antenna may be difficult to obtain but they are fairly simple to make

For matching I resorted to the well known Gamma Match. This was built out of similar material with a movable short of shim copper soldered in position. This is quite easy to tack solder for adjustment and then can be soldered more securely. The Gamma capacitor was a small 30 pF air trimmer. The trimmer could be a plastic film, ceramic or compression mica type if desired. The trimmer was

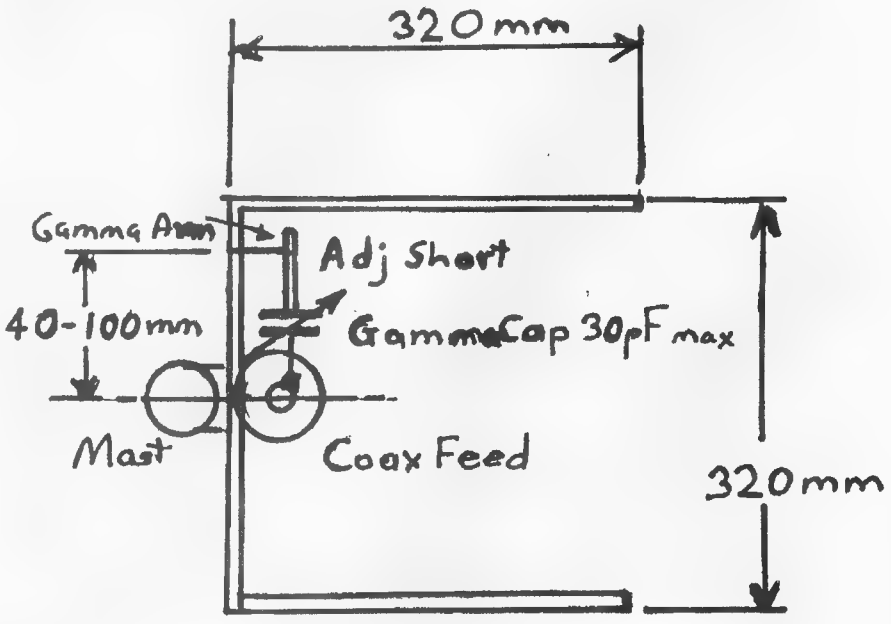


Fig 1. Handlebar Antenna.

protected by a diecast box which also mounted the coax connector. Adjust Gamma Match length and the trimmer to achieve the best SWR. Keep leads very short. If you use a plastic box make sure the earth return for the coax connector is very short and direct.

You can mount the antenna between 300 and 600 mm above the car roof on a short stub antenna mast. I mounted my antenna on a short stub mast attached to a ski bar.

Halo Antenna

The halo antenna is a simple omnidirectional horizontally polarised antenna. It is simply a dipole which has been bent into a circle. There are also some variants commercially available which instead of being circular are in square or triangular shapes. It has been described in many handbooks and designs appear in both RSGB and ARRL publications.

On the two metre band the antenna is approximately 300 mm in diameter. A six metre antenna would be larger but often these are end loaded by capacitance between the bent dipole ends to be of similar size to the two metre antenna. The loading in this case is fairly critical to adjust but for two metres is not usually required.

Matching is by a Gamma match which allows the SWR to be adjusted to a low ratio.

The antenna I built was made by bending some 5/16 th inch tubing into the circular shape. The tubing was aluminium and was filled with sand during the bending process. The tubing could be 8 to 9 mm aluminium if you need to buy it. I used some scrap tubing. A scrap of pay TV hardline outer could be used if desired. The tubing was the dipole length of 960 mm long for two metres and a gap of 80 to 90 mm was left between the ends. If you make the ends too close together you may experience capacity effects between the ends with resonance moving to lower frequencies. The antenna is shown in Fig 2.

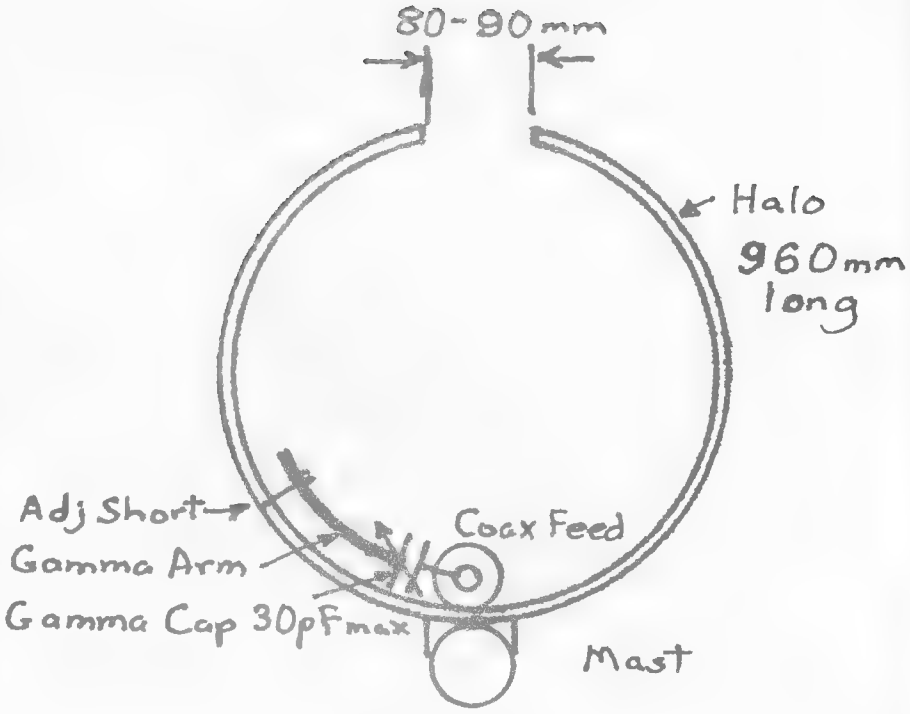


Fig 2. Halo Antenna

Matching was by using a Gamma match. The gamma arm was also bent out of the same material and was positioned 25 - 30 mm from the halo. The movable short was a piece of aluminium clamped between the element and the Gamma arm. The Gamma arm should be 40 to 150 mm long to allow for adjustment. The series trimmer was a 30 pF air spaced variable. Just about any type of small trimmer can be used. The capacitor was mounted in a diecast box which also served as the antenna mounting point and a mounting for the coaxial connector. The element was attached using a wire rope clamp which consists of a U bolt and a galvanised saddle in a neat assembly. These are available in hardware shops.

In use you should mount the antenna on a short stub mast to keep the antenna between 300 and 600 mm clear of the vehicle roof. I mounted mine on a short stub mast attached to a ski bar. It would be nice to mount it higher but then overhanging branches could be a problem.

This article originally appeared in a slightly different form in WICEN NEWS the WICEN (Vic.) Inc. News Bulletin August 1999.

ar

Errata

A number of errors crept into the article on *A Wire Log Periodic Dipole Array* by Robert Hancock VK5AFZ. We apologise for this. Please correct you June copy of AR on pages 16 and 17 as set out below. Editor

page 16 title line 2 : author's call sign was omitted. VK5AFZ
column 1 line 9 : "rotation" changed to " rotational"
line 19 : degree symbol replaced by infinity symbol
column 2 line 1 : "produce" omitted before "good coverage"
line 3 : "on"omitted before "long path"
line 12 : "frequency" added before "limit"
line 19 : "the" substituted for "a" before "range"
column 3 line 9 : "this" substituted for "and" before "is constrained"
page 17 column 1 line 5 : degree symbol replaced by infinity symbol
line 6 : ditto
line 9 : decimal point in "0.7" replaced by diamond symbol
line 10 : "on the wires" added before "on the element wires"
line 12 : "300W" instead of "300 Ohm"
line 13 : decimal point in "4.7" replaced by diamond symbol
column 2 line 3 : "50W" instead of "50 Ohm"
line 7 : "propylene" instead of "polypropylene"
line 11 : "hols"instead of "a hole" ed.

Walking 'On Air' from Sydn

PART ONE

Strange as it may seem, I have never been interested in the popular UK cross-country walks, such as Offa's Dyke, The Pennine Way, etc., even though I have walked the daily 6 mile (~10km) round trip to work for many years. On the few occasions that I have tried longer distances, success has been somewhat patchy, so I am still uncertain as to why I decided to attempt, during our summer of 1995, what is considered to be the ultimate walk in UK.

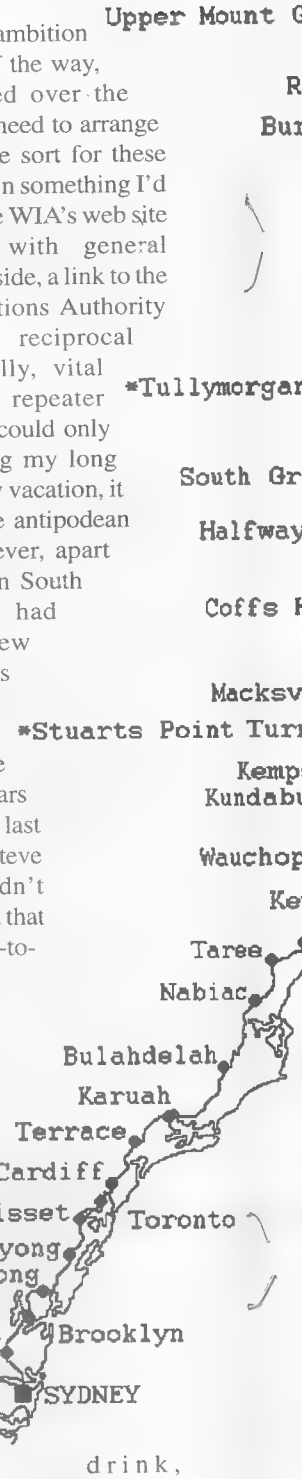
THIS IS LAND'S END to John O'Groats, the most south-westerly point in England to (almost) the most northerly point in mainland Scotland. Since I am no camper, nor was I able to persuade anybody to provide backup, it meant that I would be completely on my own and would need accommodation at the end of each day's walk. I reckoned I could manage a maximum of about 25 miles (40km) a day, with an average approaching 20 (32km), so, after many hours consulting maps and hotel guides, I produced a viable, all-road route of some 900 miles (1450km). Of course, a very important part of the "holiday" would be to take a radio, so that I could work through the extensive 2m and 70cm UK repeater networks on the way. That trip, as they say, is another story, and I did traverse the country from one end to the other in 43 days, but I only actually walked about three quarters of it. This was due to badly blistered feet in the first few days, which meant that I had to cover some sections by bus and train. However, I learnt many valuable lessons, and so the following year (1996), I went back and successfully completed the outstanding 250 miles (400km), then went on to walk the length of Ireland, Malin Head to Mizen Head, a distance of some 400 miles (640km). Looking to continue the "strolls" and having always promised myself a visit down-under, Australia initially looked far too big walking-wise, whereas New Zealand was split into two convenient islands of ~600 and ~700 miles (~1000 and ~1150kms). So, during the ZL winters of 1997 and 1998 I walked from Bluff to Picton, then Wellington to Cape Reinga, in 35 and 40 days respectively, meeting and/or contacting over 200 amateurs on the way, many through the wonderful ZL National System [1] [2]. The question then was, "Where could I go in 1999?", and, since I was planning a visit to Steve, VK4ASG, at Griffith University, what was the possibility of a little walk in Oz, say Sydney to Brisbane?

Planning and Equipment

Over the previous years, I'd averaged about 17.5 miles a day (28km), and a total trip distance of some 600+ miles (~1000km). Sydney to Brisbane, via the Pacific Highway, is 600 miles, or a little under 1000kms, the right distance, but was there the accommodation? A local bookshop provided a road atlas, some maps and the Australian Bed and Breakfast Book, whilst the Internet provided details of hotels and motels. I was pleasantly surprised at the frequency of motels and, consequently, was able to plan a route which left only three "gaps", sections where the distance between accommodation was greater than a maximum day's walk. If I were to maintain my "ego-trip" ambition of maintain my "ego-trip" ambition of walking every step of the way, something I'd managed over the previous years, I would need to arrange shuttle transport of some sort for these gaps nearer the time, again something I'd managed to do in ZL. The WIA's web site proved very useful with general information on the radio side, a link to the Australian Communications Authority for information on reciprocal licensing, and, crucially, vital information on the repeater networks. Also, since I could only attempt the walk during my long (UK) summer University vacation, it would mean braving the antipodean winter yet again. However, apart from some crisp days in South Island, the weather I had encountered in New Zealand was sometimes as good as, if not better than, the weather I'd left behind, not counting the worst floods for 100 years in parts of North Island last year. Anyway, hadn't Steve promised that it wouldn't rain until September, and that every day would be wall-to-wall sunshine .....?

Anyway, hadn't Steve promised that it wouldn't rain until September, and that every day would be wall-to-wall sunshine .....?

Being obliged to carry everything, I had, from the first walk, limited myself to a relatively small 45 litre backpack, on the principle of "If it doesn't go in, it doesn't go". Even so, with on-the-road food and drink, the pack could weigh some 35lbs (15kgm), which is probably only what the SAS carry in their sidepockets, but is



ydney to Brisbane

Tony Whitaker takes a 1000km Winter's Stroll

Dr A.J.T. (Tony) Whitaker G3RKL/VK2STB,
University of Sheffield, Department of Electronic and Electrical Engineering, Mappin Street, Sheffield S1 3JD. U.K.
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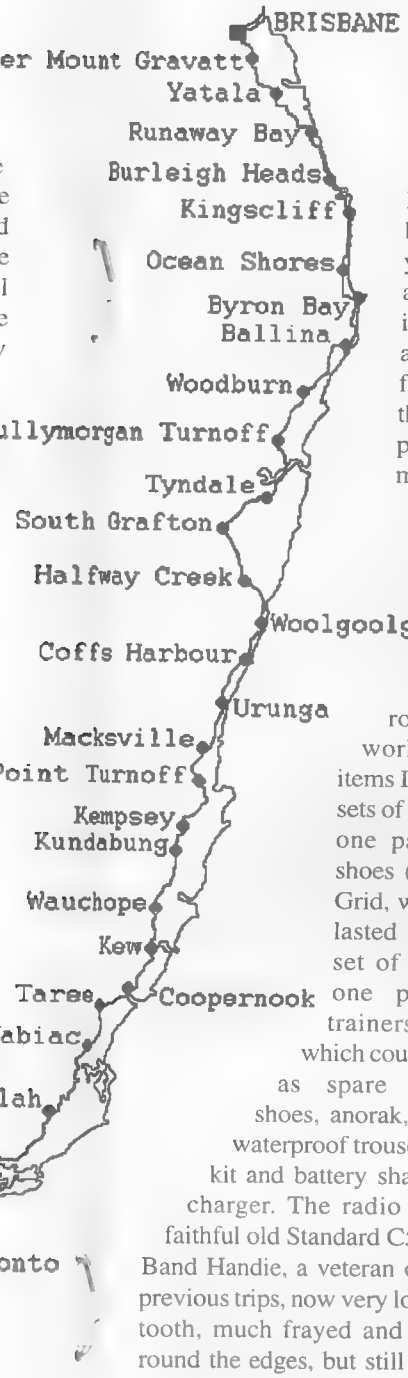

certainly enough for this unfit, non-athletic specimen. However, as I had done last year with some apparent success, in an attempt to acclimatise the feet and reduce the blisters of the past, for the two months prior to leaving, I had filled the pack with a 30 litre bag of compost and carried it on my daily 6 mile round walk to work. The main items I took were:- two sets of walking clothes, one pair of walking shoes (Saucony Azura Grid, which more than lasted the distance), a set of house clothes, one pair of house trainers (Nike Air), which could double as spare walking shoes, anorak, poncho, waterproof trousers, wash kit and battery shaver with charger. The radio was my faithful old Standard C528 Dual Band Handie, a veteran of all the previous trips, now very long in the tooth, much frayed and battered round the edges, but still working (we make a good pair), together with its charger, spare battery packs, speaker-mike and earpieces. It uses battery trays containing 6 AA-sized NiMH cells (so I could use ordinary dry cells if necessary), and I have modified it to fast charge in situ, allowing a complete recharge overnight. The aerial was a 1m long Alinco dual band mobile whip, mounted on a 19" length of aluminium angle (a quarter wavelength at 2m), which slips into the pack sidepocket, fed by 52" of RG58U (three wavelengths at 70cm). As insurance, I took along a tiny Yaesu VX-1R, with aerial lead adapter and speaker mic, which meant I could also listen to the MW and FM broadcast bands.

The Start

I left Manchester Airport early in the morning of the 30th of June 1999, on quite a reasonable summer's day (though not in the south for the tennis at Wimbledon!), arriving at Sydney during the evening of the 1st of July in weather that the pilot described as "a bit wild". Fortunately, it had cleared up nicely next morning, as I walked through down-town Sydney to the ACA office in Clarence Street to pick up my reciprocal licence. I'd managed to arrange everything via the Internet, even to the extent of obtaining the appropriate, if somewhat ambitious, callsign of VK2 Sydney To Brisbane. Unfortunately, although now fully certified, I didn't make any contacts during the rest of the day as I looked round the Bridge and the Opera House, since the VX-1 suffered almost terminal front-end overload from out-of-band commercial signals. The C528 faired no better the next day, as I crossed the SHB and headed for Hornsby through the northern suburbs, but the interference eased as the day progressed and I had my first contact in VK with Angus, VK2YCV, through the Blue Mountain repeater. There then followed several more contacts through the local Hornsby and North Ryde repeaters, culminating in a meeting with VK2KGM as I arrived at Hornsby. Murray, together with XYL Janne, had driven over specially to video an interview with me for his ATV station, after which we enjoyed a long chat over a Chinese meal. Day 2 saw me in open countryside for the first time, and the

continued on page 46

Colin, VK2AF, with whom I was in almost daily contact for nearly half the trip

Appropriate roadsign (or should it be "Creak")

Division Directory

The Amateur Radio Service exists for the purpose of self training, intercommunication and technical investigation. It is carried out by amateurs who are duly authorised people interested in radio technique solely with a personal aim and without pecuniary interest.

The Wireless Institute of Australia represents the interests of all radio amateurs throughout Australia. National representation is handled by the executive office under council direction. One councillor for each of the seven Divisions. This directory lists all the Divisional offices, broadcasts schedules and subscription rates. All enquiries should be directed to your local Division.

VK1 Division Australian Capital Territory,
GPO Box 600, Canberra ACT 2601

President	Gilbert Hughes	VK1GH
Secretary	Peter Kloppenburg	VK1CPK
Treasurer	Edwin Alcott	VK1NBH

VK2 Division News South Wales
109 Wigram St, Parramatta NSW
(PO Box 1066, Parramatta 2124)
(Office hours Mon-Fri 1100-1400)
Phone 02 9689 2417
Web: *http://www.ozemail.com.au/~vk2wi*
Freecall 1800 817 644
e-mail: *vk2wi@ozemail.com.au*
Fax 02 9633 1525

President	Michael Corbin	VK2YC
Secretary	Barry White	VK2AAB
Treasurer	Pat Leeper	VK2JPA

VK3 Division Victoria
40G Victory Boulevard Ashburton VIC 3147
(Office hours Tue & Thur 0930-1500)
Phone 03 9885 9261
Web: *http://www.tbsa.com.au/~wiavic/*
Fax 03 9885 9298
e-mail: *wiavic@alphalink.com.au*

President	Jim Linton	VK3PC
CEO	Barry Wilton	VK3XV
Secretary	Peter Mill	VK3APO

VK4 Division Queensland
GPO Box 638 Brisbane QLD 4001
Phone 07 3221 9377
e-mail: *office@wiaq.powerup.com.au*
Fax 07 3266 4929
Web: *http://www.wia.org.au/vk4*

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Secretary	David Jones	VK4OF
Treasurer	Bill McDermott	VK4AZM
Office Mgr	John Stevens	VK4AFS

VK5 Division South Australia and Northern Territory
(GPO Box 1234 Adelaide SA 5001)
Phone 08 8294 2992
web:*http://www.sant.wia.org.au*

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Secretary	David Minchin	VK5KK
Treasurer	John Butler	VK5NX

VK6 Division Western Australia
PO Box 10 West Perth WA 6872
Phone 08 9351 8873
Web: *http://www.omen.net.au./~vk6wia/*
e-mail: *vk6wia@omen.net.au*

President	Neil Penfold	VK6NE
Secretary	Christine Bastin	VK6ZLZ
Treasurer	Bruce Hedland-Thomas	VK6OO

VK7 Division Tasmania
PO Box 371 Hobart TAS 7001
Phone 03 6233 3709 (BH)
Web: *http://www.wia.tasnet.net*
email: *batesjw@netspace.net.au*
Fax 03 6223 7816

President	Phil Corby	VK7ZAX
Secretary	John Bates	VK7RT
Treasurer	John Bates	VK7RT

Broadcast schedules

All frequencies MHz. All times are local.

VK1WI: 3.590 LSB, 146.950 FM each Sunday evening from 8.00pm local time. The broadcast text is available on packet, on Internet *aus.radio.amateur.misc* news group, and on the VK1 Home Page http://www.vk1.wia.ampr.org

Annual Membership Fees. Full $77.00 Pensioner or student $63.00. Without *Amateur Radio* $49.00

From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday at 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup *aus.radio.amateur.misc*, and on packet radio.

Annual Membership Fees. Full $78.00 Pensioner or student $61.00. Without *Amateur Radio* $47.00

VK3BWI broadcasts on the 1st and 3rd Sunday of the month at 8.00pm. Primary frequencies, 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3ZWI on Victorian packet BBS and WIA VIC Web Site.

Annual Membership Fees. Full $78.00 Pensioner or student $61.00. Without *Amateur Radio* $47.00

VK4WIA broadcasts on 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 10.135 MHz SSB, 14.342 MHz SSB, 21.175 MHz SSB, 28.400 MHz SSB, 29.660 MHz FM (rptr), 147.000 MHz, and 438.525 MHz (in the Brisbane region, and on regional VHF/UHF repeaters) at 0900 hrs K every Sunday morning. QNEWS is repeated Monday evenings, at 19.30 hrs K, on 3.605 MHz SSB and 147.000 MHz FM. On Sunday evenings, at 18.45 hrs K on 3.605SSB and 147.000 FM, a repeat of the previous week's edition of QNEWS is broadcast. Broadcast news in text form on packet is available under WIAQ@VKNET. QNEWS Text and real audio files available from the web site

Annual Membership Fees. Full $85.00 Pensioner or student $72.00. Without *Amateur Radio* $56.00

VK5WI: 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.

Annual Membership Fees. Full $77.00 Pensioner or student $63.00. Without *Amateur Radio* $49.00

VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury).147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900,147.000, 147.200, 147.250 and 147.350 MHz..Also in "Real Audio" format from the VK6 WIA website

Annual Membership Fees. Full $69.00 Pensioner or student $59.00. Without *Amateur Radio* $38.00

VK7WI: 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.

Annual Membership Fees. Full $88.00 Pensioner or student $75.00. Without *Amateur Radio* $55.00

VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).

Divisional News

VK2 Notes

by Pat Leeper VK2JPA
patleep@bigpond.com

The May Affiliated Clubs Conference was well attended, with 26 clubs and all Councillors. The guest speaker for the afternoon, after business had been concluded, was Robert Bates the VK2 auditor, who spoke on the GST and gave advice on whether clubs had to apply for an ABN or even charge for the GST.

Robert answered numerous questions and made clubs' positions much clearer. The upshot was that the GST will not affect the smaller clubs and so will not have to be included in members' fees.

Robert did have one question of his own. Spying an empty pair of seats bearing the name tag of Fishers Ghost, he wanted to know if we had ghosts as delegates. Alas, they had only had to go home early, but it raised a chuckle.

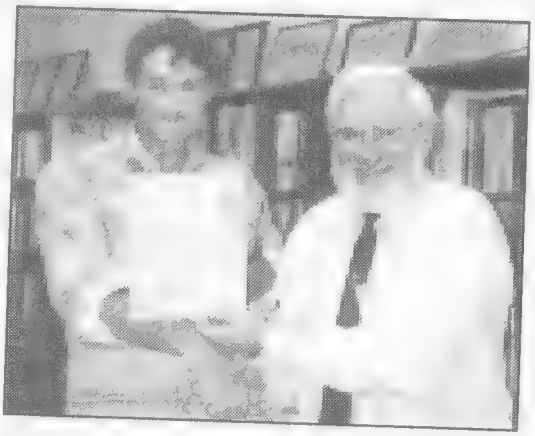
Chris Dingle had been accepted as a member the night before at the VK2 Council meeting and was standing in for another delegate who had had to withdraw at the last minute. It was pleasing to see Chris taking an active part in club activities right from the start of his amateur life. Chris also did his exams with the Institute earlier this year, passing his final morse exam not long before the conference.

To bring you up to date with the new VK2 Division Council, here are the Councillors and the positions they now hold.

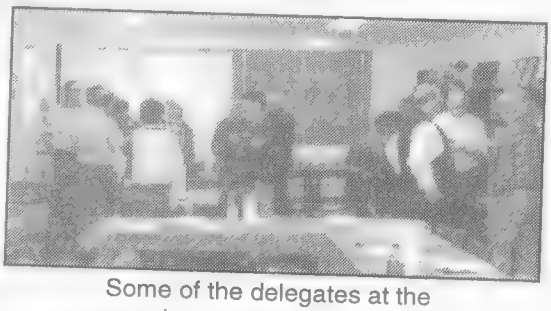
Michael Corbin VK2YC: President, Federal Councillor. Deceased Estates; Brian Keegan VK2TOX: Senior Vice President. Trash & Treasure; Terry Davies VK2KDK: Junior Vice President. Assistant NTAC; Barry White VK2AAB: Secretary, Membership Secretary, Parramatta Property, Administration, BBS Sysop; Pat Leeper VK2JPA Treasurer, Publicity, VK2 Notes, Office Manager; Brian Kelly: NTAC; Geoff McGrorey-Clark VK2EO: Olympics. QSL Buro; Ken Westerman VK2AGW: Affiliated Clubs Officer; Chris Minahan VK2EJ: Education' Dural Officer, Broadcast Roster Officer.

Don't forget — if you have any queries or gripes about the way your Division is being run — Let us know! Ring, fax or email the Division as per the Divisional page in AR. Country members can use the free call line.

That's all for this month from the VK2 Division.



During the conference Michael Corbin VK2YC, Divisional President, took the opportunity to present a very new member, Chris Dingle VK2TQX, with his membership certificate.



Some of the delegates at the morning tea break

VK3 Notes

Website: www.tbsa.com.au/~wiavic
Email: wiavic@alphalink.com.au

By Jim Linton VK3PC

WIA Victoria 90 Award

To mark the 90th birthday of WIA Victoria, members are encouraged to join in the celebration and qualify for a special award through personal achievements.

The rules:

Section 1

Mandatory achievements

a) Participate in and submit an entry to the Remembrance Day Contest 2000

b) Make contact with nine other WIA Victoria members (not during a contest), and submitting a list of such contacts with your award claim.

Note: A contact with a WIA Victoria Life Member is worth two members.

Section 2

Optional achievements

c) Submit a log in the VK/ZL/O Contest

d) Contact a declared WIA Victoria special event station

e) Recruit a new member for WIA Victoria

f) Perform a voluntary membership service delivery role

g) Have an article or news story published by either AR magazine or VK3BWI broadcast

h) Publicise WIA Victoria membership

Continued on page 32

through your QSL card (supply sample)

i) Encourage an individual to study for their amateur licence

j) Observe and submit an Intruder Watch log entry of at least one intruder

To qualify you must achieve all of the requirements in Section 1, and at least one of the optional achievements listed in Section 2.

Entries for the WIA Victoria 90 Award close on 30 June 2001. There is no charge.

New Council appointments

It was announced at the WIA Victoria Annual General Meeting that the Council had co-opted two members to join it - Brenda Edmonds VK3KT, and Gary Furr VK3KKJ.

At its first meeting the Council resolved the officerbearer positions and portfolios as follows:

President - Jim Linton VK3PC
Vice-President - Bill Trigg VK3JTW
Secretary - Peter Mill VK3APO
Treasurer - Barry Wilton VK3XV
Internet Project Officer - Gary Furr VK3KKJ

The Council also confirmed that the WIA Victoria office hours will be 10am to 2pm on Tuesdays and Thursdays, effective immediately.

The Administrative Officer, John Brown VK3NYE, Brenda Edmonds VK3KT, Peter McCallum VK3FIM, and Rob Carmichael VK3DTR (emergency) will provide the voluntary staffing needs of the office.

Consistently the newsbreaker

There's a saying - "you're damned if you do, and you're damned if you don't" and this applies to the provision of a news service for the amateur radio fraternity. During the past six months WIA Victoria has repeatedly led the way with its news and information to radio amateurs. It has not one, but seven current news services:

- News Online - a popular comprehensive and authoritative news bulletin
- "Morse code watch" - a record of the global trend of adopting 5wpm Morse code amateur licence test speeds ahead of the expected removal of the requirement in 2003
- Members News - available to WIA Victoria members - an application form to join this new membership service will be inserted in the August edition of AR magazine
- IARU RIII Conference - background and reports on this most important event
- VK3 Notes in Amateur Radio magazine
- Twice-monthly VK3BWI broadcast
- Packet News and Info bulletins through VK3ZWI
- News Online and Morse code watch are regularly quoted by overseas ham news services, and is regularly read by local and overseas radio amateurs.
- Because it is the world's authoritative source, print-outs of Morse code watch articles have been handed out at meetings of European radio amateurs where votes have been taken in support of adopting the 5wpm standard.

The IARU RIII Conference webpage gives all radio amateurs an opportunity to see the details of the discussions to take place involving the more than 100 delegates who will attend this WIA hosted event.

Now returning to the opening phrase about being damned - WIA Victoria has received some unreasonable criticism that "all news" should be for "all radio amateurs" - there are no prizes for those who guess the answer!

However, responding to the needs of its members, WIA Victoria is among the first to provide a member's section that includes news for members only.

This will enable the elected council using current technology to more efficiently communicate with the membership.

It is suspected those grumbling about the members section are themselves non-members who are unhappy that this is yet another membership service they can't use for free.

WIA Victoria will continue to strive to provide better services for its members, and keep all radio amateurs better informed through its unparalleled news services.

IARU RIII Conference

This important regional meeting of radio societies happens once every three years. WIA Victoria asks its members to consider the "global" issues affecting our hobby, which are on the agenda for the conference.

The WIA has been extremely busy for the past three months, and enormous personal efforts are being by individual officebearers to make sure the conference is a success.

An IARU RIII webpage www.tbsa.com.au/~wiavic/iaru has been created and it contains details of the conference and extracts of the WIA Input Papers - makes interesting reading.

The webpage will be progressively updated as we head towards the conference, which all WIA members through a levy on their membership subscriptions are helping to fund.

RD Contest 2000

The extremely disappointing unsuccessful bid to win the Remembrance Day Contest last year has led a number of members to re-think our strategy for this year.

The contest supervisors tell us that while we made the best improvement of any Division, the rules that were put in place to break VK3's string of wins, had their effect yet again.

While we boosted our VHF participation, the HF side let us down. Stay tuned to the VK3BWI broadcast and the WIA Victoria website - a renewed campaign for VK3 to win the RD contest has begun.

WICEN(Vic)

As editor of the WICEN (Vic.) Inc. newsletter I have a calendar of events column. Due to confused information, the date of the Rally of Melbourne, a car rally event in which WICEN plays a major role in safety communications, was wrongly printed in our May newsletter.

WICEN (Vic.) Inc. Event Calendar.

Please note that the date for the Rally of Melbourne is the 26 and 27 August 2000 and NOT 12 / 13 August as published in the WICEN (Vic.) Inc. May newsletter.

David VK3XDA, editor, WICEN (Vic.) Inc. May newsletter.

VK4 Notes Qnews

By Alistair Elrick VK4MV

Are your details correct?

On the Qnews broadcast recently it was asked that all South East Queensland Clubs check the entry on both the WIAQ Web Site and the National Packet Teletext System for correct listing of their Club details. It might well be passed to all Clubs Australia wide to do likewise, on the appropriate site for your Division. If we are to attract members and interest, the more accurate the details are, the more 'professional' we Amateurs look.

Meeting days, venues, Club contacts, Callsigns, Club nets & times and any other details that you feel should be on the listing. Keep them up to date and accurate and never miss an opportunity to put your Club forward to both the Amateur fraternity and the general public.

Computer QRM traced to 6 metres

The 6 metre band at the QTH of Doug, VK4ADC was plagued by a constant S1 to S7 carrier (depending on beam heading), radiated on 50.1104 MHz thus obliterating weak signals on the SSB calling frequency. The source was traced using a receiver firstly on 50.110 and then on the 3rd harmonic (150.330) to a house about 160 metres east of the QTH.

The users were in the practice of leaving their computer system on 24 hours a day, so there was no respite except when beaming north so as to null the interference. The problem was tracked to the video clock on an ASUS TX98 integrated motherboard, set to 50MHz in the BIOS setup. After some lengthy negotiations to gain access to the system, changing this setting to 55MHz moved the interference away from '110 and resolved the QRM. One to note in the memory for future reference. Good job of detecting Doug.

The absolutely fabulous radio fun weekend on the Tablelands

The weekend was great, good weather, good friends, and lots of radio fun. On Saturday members of the Tableland Radio and Electronics Club converged on Platypus Park on the outskirts of Atherton. There they were given written instructions, vehicle numbers, section sheets and then left at three minute intervals to wind their way through the backblocks of the Atherton Tablelands.

The clues that entrants had to find were many and varied and included, platypus, a kookaburra, farm names, public phonebox number, cattlecamps, the "Mice of Morsbey, plus 2 metre check-ins for "Check Point Alpha" ably manned by the wily fox, VK4WL Bill. Once in Mareeba entrants then had to find the fox by listening to clues transmitted on channel 20.

First one to find the fox was Ray, VK4TFT. Overall first place went to Keith VK4BKS and XYL Barbara. The wooden spoon went to Speedy Gonzales - John VK4DJS and his new Calais swiftly manoeuvred by his XYL, Narelle. There was $500.00 worth of prizes given away and everyone went away with lots of good memories plus a prize. After an enjoyable BBQ and pleasant night, members of the club crossed "live" to Q-News on Sunday Morning.

Next year they'll stage a similar event with even harder clues and more radio work. Sounds like a great event for more Clubs to organise for their members.

And with Club outings being mentioned, after the June social outing to the 'My Fair Lady', Townsville Amateur Radio Club is organising a trip to the Choral Society Theatre Restaurant on 26th of August, bookings by August 4th. Knowing the way the TARC Inc. runs things and the members enjoy themselves, that will be one not to miss if you are in the area. As well during July, there will be the communications support for the Strand Mini-Swim event; don't those people up there know it's winter?

The new 70cm voice repeater in SouthEast Queensland is up and running on 438.475 MHz. It is primarily designated for WICEN, but it is free for use when not active for WICEN business. A 91.5 Hz CTCSS sub-audible tone is required and there is a 60-second time out. Location is the VK4RZC site at Maleny, with 100W fed into a binary array antenna up at about 50 feet on the NorthEastern corner of the tower.

That's it for this month, 73's from Alistair VK4MV.

VK7 Notes

VK7 Division Executive 2000/2001

Divisional Councillors.

Ex Officio Officers.

Mr. Ron Churcher VK7RN
Awards Officer

Mr. John Bates VK7RT
Mr Bob Cropper VK7BY
QSL

Mr. John Bates VK7RT
Mr. John Bates VK7RT
FTAC

Mr. Tony Bedelph VK7AX
Mr. Phil Corby VK7ZAX
Broadcast

Mr. John Rogers VK7JK
Mr Mike Jenner VK7FB
Mr. Scott Evans VK7HSE
Public Officer

Mr John Bates VK7RT
Mr Mike Jenner VK7FB
Historian

Mr. Richard Rogers VK7RO
Mr Dale Barnes VK7DG
Federal Councillor

Mr. Phil Corby VK7ZAX
Mr. Timothy Holloway VK7TIM
Alt Fed Councillor

Mr. Ron Churcher VK7RN
Membership

Mr John Bates VK7RT
Hon. Solicitor

Mr. Phil Corby VK7ZAX
Education Off.

Mr. Reg Emmett VK7KK
Intruder Watch

Mr. Robert McKenzie VK7RB
Webmaster

Mr. Robert McKenzie VK7RB

VK1 Notes

Tower & Antenna Decision In ACT

A sensible decision has resulted, from an Amateur Radio perspective, on an Amateur Radio 'tower' case in the Australian Capital Territory.

Barry Booth VK1WV, then a Novice, had applied last year for 'planning permission' to erect a 12m single telescopic pole with guy wires supporting a trapped inverted V. ACT Planning And Land Management agreed to the application. Several local residents objected to the ACT Administrative Appeals Tribunal principally "on grounds which related to the visual impact of the proposed antenna and its capacity, when in operation, to cause electromagnetic interference with television, radio broadcast, roller door and other facilities of adjoining lessees."

Mr M.H. Peedom, President of the Tribunal, took evidence during several hearings and a site inspection. Evidence was completed on 24 February 2000. On 29 March 2000 a decision was handed down stating, "I am satisfied, on the evidence, that the proposed antenna, which is to be located at the rear of the main building on the subject land, will not be excessively obtrusive and will be as inconspicuous as is possible in the circumstances and that it will not cause a loss of amenity of any significance to the streetscape...."

The Tribunal heard evidence on the matter of electromagnetic interference from Gilbert Hughes VK1GH (President of the VK1 Division, WIA, and formerly an officer in the Australian Communications Authority), Rob Milikin VK1KRM (a professional communications consultant), Bill Jones (Mgr, Southern NSW Area Office - ACA), and Tim O'Neill also of the ACA.

The Tribunal noted that, "[several witnesses] gave evidence that there were few complaints of electromagnetic interference from amateur radio installations in the ACT. They said that the Australian Communications Authority had procedures for dealing with complaints of electromagnetic interference and could take appropriate steps to address any problems." The Tribunal determined that, "On the evidence in this case I do not consider that there is sufficient reason related to health issues or electromagnetic interference to justify refusal of the development application."

The decision means that the antenna will be erected and some trees planted to give screening along a boundary.

Gilbert Hughes VK1GH (President of the VK1 Division) said that this case was an example of the support that WIA Members could expect from the WIA ACT Division if they had problems with tower planning and approval.

See full transcript at

http://www.austlii.edu.au/au/cases/act/ACTAAT/2000/5.rtf

The full transcript was only loaded to the AUSTLII system last week.

See full story via either of these Internet addresses. (Same story in different visual forms.)

http://www.austlii.edu.au/cgi-bin/disp.pl/au/cases/act/ACTAAT/2000/5.html?query=%7e+mccubbin

http://www.austlii.edu.au/au/cases/act/ACTAAT/2000/5.rtf

Further detail is available from Gilbert Hughes VK1GH, on (02) 62543266 or

email: ghughes@dynamite.com.au

Please note that a different version of this release was sent to R&C Magazine. Apart from other changes, this version plays up the WIA aspects.

Peter R. Ellis VK1KEP PR Officer, VK1 Division

W- (02) 62653276 / H-(02) 62540262

Email: peter.ellis@cbr.defence.gov.au

5/8 Wave

Our July General meeting will be held on Tues 25th of July. Adrian VK5ZSN will be giving a talk on Radiation Hazards in a typical Amateur backyard. This is a subject many may not understand fully but due to new RF standards it is a topic of which amateurs should have a good working knowledge.

During August our divisional president Jim VK5NB will be attending the IARU Convention in Darwin as an Australian representative. The Darwin Amateur Radio Club is doing a great job organising the venue for the convention and also the accomodation for the delegates.

More repeaters news. During June the 2m repeater VK5RLZ returned to air, and a new 70cm repeater VK5ROC at Ottway was commisioned. Both of these repeaters are run by the SA VHF Group. The 23cm repeater VK5RWH which was located at O'Halloran Hill has been taken off air for refurbishing before being re-located at a new site.

A couple of oversights from previous columns is that the 438.075 repeater was re-located by the South Coast Amateur Radio Club to Mount Terrible and has a new callsign VK5RSC. Thanks to the hard work by various volunteers the Port Augusta repeater is back onair on its new frequency of 146.975.

A full rundown on repeater sponsorship by our division will be in a coming column. It has been suggested that our division in conjuction with the Adelaide metropolitan radio clubs run a hamfest in 2001. If you are your club are interested in participating please get in touch with Jim VK5NB. So far we have had interested from at least 3 of the major clubs in Adelaide, at this stage it looks promising.

ar

VHF UHF AN EXPANDING WORLD

David K Minchin VK5KK
Postal PO Box 789 Salisbury South Australia 5108
E-mail: tecknolt@arcom.com.au Web page: http://www.ozemail.com.au/~tecknolt
Fax +61 8 82346396 Phone 0414 808060 (before 2130 EST please)
All times are UTC

Mid Winter DX 144 – 432 – 1296 MHz

A series of High Pressure cells mid/late May and in June 2000 led to a number of "Overland" Tropo contacts extending to 1100km between VK3, 5 & VK1, 2. It is not unusual to get stable Highs, with a Central MSL of 1037 HPa, in winter. However, this combined with stable upper level conditions produced openings on 144 MHz and above almost surpassing those over the same paths last summer

Contacts extended from Southern VK3 & VK5 to far as Sydney and Adelaide in either direction although it would seem no contacts actually occurred from Sydney to Adelaide. Contact information forwarded:

Gordon VK2ZAB reports: "Signals on 1296.1MHz SSB were 5/9 both ways between VK2ZAB and VK3AJN this morning (20/5/00) between 22.00Z and 22.30Z. Signals from VK1ZQR running 10 watts were 5/6. Lyle VK2BE received signals at similar levels at his QTH some 35 km south of me." ... VK2ZAB

Colin Hutchesson, VK5DK, Mt Gambier reports ... "Here are details of DX worked on 18/05/00 VK2MP on 144MHz at 1115 with signals 5 x 9 both ways. VK2MP on 432MHz at 1122 with signals sent 5 x 4 and received 5 x 3. VK2DXE on 144MHz at 1220 with 4 x 2 sent and 5 x 2 received. VK2CZ on 144MHz at 1225 with 5 x2 x 9 sent and 4 x 1 received and VK2KYP on 144MHz at 1237 with 5 x 2 sent and 5 x 5 received. Conditions at time of contacts Barometric pressure 1029 HPa Temperature 11Deg C RH 83 % High Pressure cell extending right across the lower part of Australia."

"On 19/4/00 from 2130, VK2MP at 5 x 9 on 144 both ways VK2EMA at 5 x 6 on 144 and 5 x 1 on 432 same sigs both ways VK2ZAB at 5 X 2 on 144 received 5 x 1, but no sigs on 432"

"On 21/5/00 @ 0815 VK3ZLS on 144MHz @ 5 x 7 both ways, 1007 VK2QR on 144MHz @ 5 x 8 both ways. 1025 VK1ZQR on 144MHz @ 5 x 1 both ways. 1030 VK2MP on 144MHz @ 5 x 4 both ways, 1100 VK3EK on 144MHz @ 5 x 3 both ways, 1140 VK2QR on 432MHz @ 5 x 1 both ways & 1200 VK2EMA on 144MHz @ 5 x 3 both ways."

"My 144 MHz yagi has broken in halves, and the 8 elements left are not as directional as the original 13 elements. Putting up 2 x 12 element yagis to replace it in the near future."

"To conclude things I was up and on air at 2130Z this morning 22/5/00, called CQ and back came VK2ZAB at 5 x 9, he gave me 5 x 6-7, so we QSY'ed to 432 and were able to exchange 5 x 1 reports both ways before signals disappeared. This was at 2140 UTC 21/5/00 then worked Reg VK2MP at 5 x 9 again at 2155 UTC on 144 MHz. I rang Russell 3ZQB, who was not hearing signals from Gordon very well, but was able to exchange 5 x 2 reports only on 144MHz. Jim VK3AEF and Geoff VK3FIQ both worked VK2ZAB at good strength." .. Colin VK5DK

Chas VK3BRZ reports .. "23/5/00 at approximately 22:15Z David VK3XLD (Lara) worked Mark VK2EMA (Tottenham) on 23cm. Signals were 52/53. Distance about 700km. Contacts were also made on 2m and 70cm with huge signals." ..Chas VK3BRZ

Trevor VK5NC reports ..."Today the 21-5-2000 VK2MP, VK2ZAB ,VK2KU on phone and CW and VK2CZ on CW were worked in Mount Gambier. Band conditions were reasonable; signals were not strong but quite readable with a long slow deep QSB. Mt. Gambier was totally overcast and the 2.30pm max temperature (briefly) was 15 degrees with light showers. In the evening of 21/5/00 contacts with VK1ZQR, VK2QR, VK2EMA and VK2QR on 70cms. The band was busy with most of the activity around 144.1 MHz. There was some activity from VK3 and stations heard were VK3AXH, VK3BJM, VK3EK, VK3XPD & VK3ZQB." ... Trevor VK5NC

Several Adelaide stations reported working into VK1 & VK2 with Barry VK5KCX, Gawler (40km North of Gawler) working VK2MP, on 144.1 MHz, around 1100Z on 18/5. VK5KK heard and was heard by VK2MP, after, but no contact. On 21/5/00 VK5KK, Adelaide worked VK2QR, Cabramurra, NSW on 144.150 MHz, 21/5/00 at 1010Z 54/55.

144.150 MHz Wednesday SSB Net

Rob VK3EK reports. "The 144.150 net is still operating of a Wednesday night BUT check-ins are getting very light on ... THIS is your chance to make sure that the old saying of you never hear anyone on the VHF-UHF weak signal segments of the band not be the case. If we want the bands to be there, it will help to keep them by a simply USING THEM. I have had 51 different stations call in on the net since I have been running it from 2710/1999."

The format : we START at 8:30 EST every Wednesday night. Myself, Rob VK3EK, at Bairnsdale calls for Check-Ins on 144.150 and Tony; VK3CAT calls on 3.6500 as a liaison. I have 144.150 MHz 432.150 MHz 1296.150 MHz on and anyone wishing to try on any of these frequencies is welcome .... we do and have a lot of fun in the process. If anyone wishes to CHECK-IN or I may have missed you, they can either Check-In with

Tony or E-mail MYSELF to look harder for you. Hope to work a few of you NEXT WEDNESDAY NIGHT." ... Rob - VK3EK Bairnsdale 144.150 Net

VK5RAD Adelaide's Primary Repeater Celebrates 30 Years

Adelaide's Primary 2 metre Repeater (147.000MHz) celebrates its 30th year of continuous operation this year. VK5RAD is located at Crafers about 200 metres South of the Freeway and about 3km south of Mt Lofty. The 2m repeater, built by WIA volunteers, was first commissioned in 1970. It has much of the original hardware in use with the RF and control circuitry being progressively upgraded. The same chassis, steel cabinets and original shed are still in the use. Craig VK5ZAW and Neil VK5ZJA have maintained the repeater over many years.

The 2m Antenna relocated from the original tower, a WW2 Army tower, to the New tower about 15 years ago. The 120-foot "New" tower is now close to replacement, its longevity was not helped by falling over in 1991! With telecom's carriers bidding for the site, VK5RAD could well soon be at tower number three!

The VK5RAD 70cm repeater on 438.525MHz, built by Mark VK5AVQ, was installed in 1979. Packet radio equipment on 2m & 70cm MHz was added in the early 90's.

Finally, in Feb 2000, the site received its long awaited 6m repeater. The new VK5RAD Adelaide 6 metre repeater is on 53.775MHz (-1MHz Duplex). COLIN VK5ACE constructed it, using a modified Phillips FM814 Base station and PIC84 controller. Notch cavities using 1 5/8" Heliax and separate wave transmit and receive antennas complete the installation.

The site also has an excellent microwave outlook (No trees!) to both the Southeast and West. The suitability of the site as an alternative Microwave beacon site above 3 GHz has not been overlooked. Some trials are planned for this summer.

Solar Flux Peaks in May

The Forecast Bulletin ARLP019 predicted that solar flux might peak around 220 on 18/5/2000. Instead, on 17/5/2000 the noon solar flux reading was 262, a new high for the current solar cycle 23. The previous high for this cycle was 248.5 on 10/11/99. The solar flux has not been this high since cycle 22, when it was 271 on 3/2/92. In 1992, solar flux from January 29 through February 3 was 266, 280, 303, 284, 288 and 271.

The most active days were May 12 and 17 2000, when the planetary A index was 22 and the K index was as high as five. Solar flux is expected to bottom out around 130 around 3/6/2000 and reach another peak around the middle of June 2000.

6 Metre Activity from VK3 & VK5

Clarry Castle, VK5KL, Enfield SA reports ... " From the 4th until 13th of April 200, the XE1KK/B beacon was heard every day at times reaching 599 but only on the 12th of April were any amateurs heard .. XE1BEF and XE1JW, but only managed to work XE1BEF, 58 @ 2344 12/4/00" Clarry also reports working 3D2AG 10/4/00 @ 2350 559 and T88JU 11/4/00 @ 0025, 599.

Clarry has been active on 50 MHz for many years. He had the distinction of holding the 50 MHz two way world record, of 8533km, in August 1947 working W7ACS/KH6 in Hawaii from Darwin as VK5KL. Of special note was that the record contact occurred much later in the day than the usual F2 peak. Not credited at the time, this was the first recorded DX QSO via the yet to be discovered mode of Transequatorial propagation. Clarry is still active on 50 MHz as well as on ATV via the VK5RTV ATV repeater.

Gil Sones, VK3AUI reports working 13 countries, on 50 MHz, over the April 2000 period. The XE1KK/B Beacon was consistently heard throughout the period, with contacts to Mexico on 4/4, 8/4, 9/4, 10/4, 11/4, 15/4, 19/4 & 20/4. Also worked on 20/4 was XE1BEF, W7CI, WA7KYZ, K5NA, N5JHV, XE1/SM0OUG, WA5IYX, 3D2AG, K5AM & XE1J.

David Vitek has also submitted his logs for the March – May 2000 period and confirms that the period of 20/4 – 25/4 was the best period for the America's into Adelaide with W5OZI and others being heard on 21/4/00 from 2252 – 2258Z. XE1KK/B over this period as well as other XE stations. MUF after this period dropped to below 40 MHz on the US path.

6 Metre PSK QSO With Japan

While not claimed as a first, the following may be of interest for those experimenting with PSK. An excellent article on PSK, by Alan VK6PG, appeared the March 2000 issue of AR. Steve VK4KHQ reports .. "A PSK31 QSO finally took place between VK4KHQ in Brisbane (QG62LJ), & JR9DGU @ 0845 UTC 30/4/2000 on 50.105MHz USB. Distance about 7300km with marginal propagation. (Only 3 weak beacons audible on 6Mx at the time). My power output was 10 watts to a quarter wave whip & 6 element Yagi at 6 meters height." ... Steve VK4KHQ.

Monitoring Propagation with ACARS on 131.55 MHz

John Bird has forwarded a log of ACARS activity from his QTH over May/June 2000 from his QTH at latitude 37,40.38S, longitude 144,55.38 E. ACARS is short for Aircraft Communications Addressing and Reporting System. The log is a recording of aircraft positioning reports via ACARS.

The file was generated by AirNav 3.1 © 32bit ACARS, Internet, HF and VHF Flight Tracking and monitoring. Software for ACARS tracking can be found at can be found at http://www.airnavsystems.com and http://www.cas.honeywell.com/bcas/products/worldnav.cfm .

The following is an example of reception over 2800 km's on 28/5/2000

FLIGHT	SQ0217
SELCAL	LMAD
REG	9V-SML
AIRCRAFT	B747
TIME	0136Z
COORDINATES	21.246S 119.451E

DISTANCE 1632.456 nautical miles

Equipment in use:-

Scanner:	Tandy PRO-2034 on 131,550 MHz.
Antenna:	Mobile One Bandspanner Base @ 30 feet.
Computer:	486DX100
Software:-	Wacars, SkySpy, AirNav.

Normal reception range is out to 100-110 nautical miles. Notable exceptions to this limit do occur, as per the above example when a Southwest Cold Front came through.

Microwave Primer Part Two: 23cm Band

As mentioned last month, the 1240 – 1300 MHz (23cm) band is at the crossroads of our UHF & Microwave bands. Of all the bands above 1000 MHz it is perhaps the easiest to

get operational with a variety of Commercial, Kit and Home brew Equipment.

Just what can be expected from 23 cm? The same types of VHF and lower UHF Tropospheric propagation effects this band albeit being more critical and subject to higher over the land path losses. 23cm has been successfully worked over nearly 2500 km on Tropo paths on mainland Australia, not much short of the 144 & 432 MHz records.

23cm can successfully be used from the home QTH as long as you have a favourable horizon in the desired paths. Trees and Foliage have some effect, although no where near as bad as at perhaps 3 GHz. 23cm is a good band for portable operation with beam antenna's rarely longer than 2.4 metres.

The most basic way to create a signal on 23cm is to use a tripler from 70cm! Early equipment used either 2C39 valve or varactor multipliers. Some of the first SSB contacts were actually made using multipliers and special divide by "three" SSB spectrum exciters. A lot of work was done by Reg VK5QR in this area, the equipment being used on the World record contacts on 1296 and 2304 in the seventies. I remember hearing some of these QSO's on 1296 MHz in the seventies; the SSB quality was more than sufficient for UHF work!

My first SSB transverter (1978) was a DF8QK 200mW design with a 28 MHz IF from VHF Communications. Looking at the transverter with a Spectrum Analyser, years after, only confirmed my suspicions that the image and LO rejection was only around 20 db below the wanted signal!

Since the eighties, a number of commercial transceivers have been available for 23cm. These include the Icom IC1271, IC1275, IC970, Yaesu FT736 and Kenwood TS790A as well as a number of FM only transceivers. Despite this most operation still seems to revolve around transverters coupled to lower frequency transceivers. 144 MHz is the most popular IF although 50 and even 28 MHz has been used in the many designs to be found over the last 25 years.

Various Transverter designs have come and gone. Commercially built transverters include several models from Microwave Modules and SSB Electronic. The VK5 Division Equipment Supplies, alone, sold over 100 23cm transverters between 1989 and 1999. Minikits, run by Mark VK5EME, also supplies a modern 23cm transverter with various options. More details can be found on the Web at http://homepages.picknowl .com.au/vk5eme/minikits/Kits2.html Pre-amplifiers typically use inexpensive low noise Gasfet or HEMT devices.

10 – 15 watts of output power for moderate outlay can be had using the ubiquitous Mitsubishi M57762 (with 200mW drive). Rumours circulated a recently about the demise of a large percentage of Mitsubishi modules. Indeed, the M57762 was announced as being obsolete with ALL module details were removed from Mitsubishi's Website! The good news is it is now replaced by a M57762-02, with similar specs and cost.

Valve or solid state amplifiers can be used for higher power. One is the Chip Angle, N6CA, water-cooled 2C39B valve design capable of about 150 Watts. 2C 39B's no longer used commercially have been available as surplus for many years.

Solid State methods of gaining power are restricted to paralleling two or four Mitsubishi M57762's. Another method that hopefully will become more affordable is using the New LDMOS "Bi-Fets" designed for 1500 MHz. An amplifier using a single, 28-Volt rated, FET can provide around 100 watts output for 15 watts drive (i.e. a single M57762)

If you need more help on finding information on 23cm please drop me a line. Next month, we will change pace a little and examine some of the specifics of Microwave duct propagation, perhaps giving away some of the secrets already learnt on some of the longer paths. And probably confirming that a lot more is still to be discovered!

In Closing

Pressure for space last month meant the Reminder for Gippstech 2000 was left out, if you live in VK3 you may just get this AR just in time. Another reminder regarding Grid Locator information (i.e. where you are and what bands you are on) must be in by 16/7/00. I will be publishing this information along with Guy's VK2KU's updated Grid Square standings in the August issue of AR

Thats it, except for the final say ... *"If you want to capture your youth, just cut off their pocket money!"*

Till next month 73's David VK5KK

ICOM Clearly Ahead

"VK3LZ calling!"

More sound information from your friends at Icom.

IT'S A WORLD FIRST IN SIGHT AND SOUND FROM ICOM

In a world first for a handheld communications receiver, we've just released in Australia the IC-R3, a wide band receiver combined with a 2 inch TFT colour LCD and TV screen. The IC-R3 offers super wide 0.5-2450 MHz frequency coverage for AM, FM, wide FM and TV picture reception. The LCD shows information such as receiving frequencies, tuning steps, and memory channel numbers...while the TV screen displays any image within frequency range. A long life Lithium-Ion battery is also supplied which gives almost 2 times longer operating time than Ni-Cds. And for added convenience the unit is also alkaline battery ready.

Everyone at Icom Australia has been knocked out by this breakthrough unit. Why don't you see it for yourself at your local authorised Icom Dealer soon.

RIVERINA HAMFEST A MUST SEE FOR ENTHUSIASTS.

Conducted by the Twin Cities Radio and Electronics Club, the Riverina Hamfest is always well attended by enthusiasts in the Albury/Wodonga area, and from much further afield.

Mark down Sunday, August 13 in your diary with the Murray High School on the corner of Kaitlers Road and Kemp Street Lavington as the venue.

"...73"

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CONTESTS

Ian Godsil VK3DID
57 Nepean Highway, Aspendale, 3195
Phone: 0408 123 557 Email: contests@wia.org.au

Contest Calendar July — September 2000

Jul 1	Canada Day Contest	(CW/Phone)	(Jun 99)
Jul 1	Jack Files Contest	(CW)	(May 00)
Jul 1	Australasian Sprint	(CW)	(Jun 00)
Jul 1	NZART Memorial Contest	(CW/Phone)	(Jun 00)
Jul 1/2	Original QRP Contest		
Jul 8	Australasian Sprint	(SSB)	(Jun 00)
Jul 8	Jack Files Contest	(SSB)	(May 00)
Jul 8/9	IARU HF World Championship	(CW/SSB)	(Jun 00)
Jul 8/9	Internet 6 m DX Contest		
Jul 15	Pacific 160 Metres Contest		(May 00)
Jul 15/16	SEANET CW Contest		(Jun 00)
Jul 16	Colombian Independence Contest	(CW/SSB/RTTY)	(Jun 99)
Jul 29	Waitakere Sprint (Phone)		(Jun 00)
Jul 29/30	RSGB IOTA Contest	(CW/SSB)	(Jun 00)
Jul 29/30	Russian RTTY WW Contest		
Aug 5	YO DX Contest	(CW/SSB)	
Aug 5	SARS Sprint Contest	(CW)	(Jun 00)
Aug 5	Waitakere Sprint	(CW)	(Jun 00)
Aug 12/13	Worked All Europe DX Contest	(CW)	
Aug 12/13	RD Contest	(CW/SSB)	(Jul 00)
Aug 19/20	Keymen's Club of Japan Contest	(CW)	(Jul 00)
Aug 19/20	SEANET SSB Contest	(Jun 00)	
Aug 26/27	SCC RTTY Championship		
Aug 26/27	TOEC WW Grid Contest	(CW)	
Sep	2/3 All Asia DX Contest (Phone)		(May 00)
Sep	2/3 Bulgarian DX Contest (CW)		
Sep	9/10 Worked All Europe (Phone)		(Jul 00)
Sep	16/17 SAC DX CW		
Sep	23 Panama DX Contest (SSB)		(Aug 00)
Sep	23/24 SAC DX Phone		
Sep	23/24 CQ WW RTTY DX Contest		

Thanks this month to ARRL S5OU JE1CKA VK6APK

Greetings to all Readers.

Some of the results listed below had a postscipt advising that several logs were sent to the wrong address and therefore missed out. This was a point I mentioned in the column recently, so again I take this opportunity to ask you all to be especially careful to find out the rules and to do exactly what is asked - not what you remember from a previous occasion. Also, if you have friends who are not members of WIA but want to participate in our Contests, please either show them your copy of the rules or give them my address and ask them to contact me.I am quite surprised to know that logs are received from entrants who admit that they have never seen the rules!!!

Apology

From time to time lately I have experienced difficulties in getting most recent information about dates of contests in Europe. Yes, it's easy to make excuses, but with all our modern communication methods, I have at times published incorrect dates in this column, caused by some contest sites not being updated early enough for printed copy like this.

For this I apologize most sincerely. At the moment I don't know what is an answer, but all dates above I believe to be correct. My thanks to those who take the trouble to point out my mistakes!

Please bear with me and check each month as it comes out.

RD Contest

It's time again for the RD contest. Please see the separate article about that and plan now to get your station working well – if it's not already, of course!

New Exchange System

You may recall that in May I asked for comments on a new exchange system,

whereby the use of RS(T) would be discontinued.

I am pleased to report that several people responded to the request and that opinion was very much in favour. Thanks to those who took the trouble. Now I shall report that to the Region 1 Contest Chairman and also talk to local Contest Managers about possible implementation in 2001 for our VK contests.

I look forward to hearing you all in a contest soon and certainly in the RD.

73 and good contesting, Ian VK3DID
E-mail: <*contests@wia.org.au*> Phone: 0408-123-557

Results JIDX 1998

(Call\band\score\award)

VK2XT	28	2106	
VK4DZ	28	988	
VK2APK	14	14194	plaque
VK4BDX	7	26404	plaque

Results CQ/RJ WW RTTY WPX 1998

(Call\cat\score\award)

VK6GOM	SOABH	386880	plaque
VK4UC	SOABL	412720	plaque
VK2KM	SB15	70007	highest VK2
VK6WR	SB20	78010	highest VK6
VK2BQS	SB20	481	highest VK2

Worked All Europe DX Contest

CW: 12/13 August
SSB: 9/10 September
RTTY: 11/12 November
0000Z Sat – 2400Z Sun

Object is to work European stations (except in the RTTY section where anyone works anyone). Bands are 80 - 10 m. In the contest, avoid 3550-3800 and 14060 - 14350 kHz on CW and 3650 - 3700, 14100 - 14125 and 14300 - 14350 kHz on SSB. The minimum time of operation on a band is 15 minutes, although bands may be changed within this period if, and only if, the station worked is a new multiplier.

Categories are single operator all bands; multi-operator single transmitter; and SWL all bands. DX cluster support is allowed. A maximum of 36 hours is allowed for single operator stations, with up to three rest periods (mark them in the log).

Exchange RS(T) plus serial number. Additional points can be gained reporting QTCs as follows: after working a number of European stations, details of those QSOs (ie QTCs) can be reported during a current QSO with a European station. In the CW and phone sections, QTCs are sent from non-European stations to European stations. In the RTTY section, QTCs can be sent to any station, including non-Europeans, outside one's own WAC continent. A QTC contains the time, callsign and QSO number of the station being reported, eg: "1307/DA1AA/431" means you worked DA1AA at 1307z and received serial number 431. Commence QTC traffic by sending the QTC series and number of QSOs to be reported, eg "QTC 3/7" indicates that this is the third series and that seven QSOs will be reported. A QSO may be reported only once and not back to the originating station, who can be worked more than once to complete the quota. Only the original QSO, however, will have points value.

Multiplier on each band equals the number of European countries worked on that band (or on RTTY only, the number of DXCC/WAE countries), times a band factor. The band factors are four for 80 m, three for 40 m and two for 20/15/10 m. Add the band multipliers together and multiply by the sum of (QSOs + QTCs) to obtain the final score.

SWLs may log each station heard, European and non-European, once per band. **Logs** may be by logging program, or on DOS disc, providing a paper summary is included. **Send logs** by mail to: WAEDC Contest Committee, Box 1126, D-74370 Sersheim, Germany. Logs may be sent by e-mail to: <*waedc@darc.de*> Deadlines are 14 Sept (CW), 14 Oct (SSB) and 14 Dec (RTTY).

European countries are: C3 CT1 CU DL EA EA6 EI EM/N/O ER ES EU/V/W/ F G GD GI GJ GM GM(Shetland) GU GW HA HB HB0 HV I IS IT JW(Bear) JW(Spitzbergen) JX LA LX LY LZ OE OH OH0 OJ0 OK/L OM ON OY OZ PA R1/FJL R1/MVI R/U(RUSSIA) RA2 S5 SM SP SV SV5(Rhodes) SV9(Crete) SV(Mt Athos) T7 T9 TA1 TF TK UR-UZ(Ukraine) YL YO YU Z3 ZA ZB2 1A0 3A 4U(Geneva) 4U(Vienna) 9A 9H.

Keyman's Club of Japan

19/20 August, 1200Z Sat – 1200Z Sun

This contest is designed for CW enthusiasts and will particularly suit those who are collecting Japanese prefectures for awards. The only **category** is single operator multi-band.

Suggested frequencies: 1908 - 1912 (split); 3510-3525; 7010 - 7030; 14959 - 14090; 21050 - 21090; 28050 - 28090 kHz.

Exchange: RST plus continent code (OC).JAs will send RST plus district code. **Score** one point per QSO. **Multiplier** on each band is the total number of JA districts (max 62 per band). **Final Score** is total points X total multiplier. Show duplicate QSOs with zero points. Attach **summary sheet** showing usual information and **send logs** to: Yasuo Taneda JA1DD, 279 - 233 Mori, Sambu Town, Sambu, Chiba 389-12, Japan, postmarked no later than 15 September, 2000. ASCII logs on DOS disc most welcome.

2000 Remembrance Day Contest

12/13 August 0800Z Sat – 0759Z Sun
Presented by Alek Petkovic VK6APK
See next page

SILENT KEY

The WIA regrets to announce the recent passing of:

H J (Harry) Hanigan VK2DHH

S S (Stan) Silver VK4CDW

F (Fred) Reeve VK5YK

Remembrance Day Contest 2000

Well, here it is again – another Remembrance Day Contest. Perhaps, like me, you wonder where the last year has got? All I can say is that it just disappeared in work!

It's Time

By the time you read this there will be about one month to go before this year's Remembrance Day Contest. Now is the time to check through your station and see that everything is working fine.

Don't leave it too late, or you may be disappointed!

Changes

There is really only one change and that is in Rule 9b. Yes, I know that some of you will be annoyed, but last year there was strong feeling that (a) this is a contest in memory of an earlier generation of operators; (b) automatic operation is entirely inappropriate under such circumstances, as are modern digital modes.

Historical

I went in search of a list of DIVISIONAL WINNERS for the last few years and this is what I discovered –

1999	VK7	1998	VK7
1997	VK7	1996	VK7
1995	VK1	1994	VK3
1993	VK3		

Further back I was unable to find; but these few years tell a story! How about some more zest from certain Divisions this year?

Logging Program

John VK4EMM has a program called Quick Score that is set up for several Australian contests.

It reads the .bin file from the CT contest logger. I am not very *au fait* with automatic loggers, but I have had a look at Quick Score and can see how useful it could be to a properly set-up station.

This is available for downloading at *http://www.uq.edu.au/radiosport* under Software. If other Clubs have similar programs, please let me know.

Don't delay – have a go and give yourself a taste of what contesting can be all about, especially if you have not tried before or not for some years..

Contesting is not difficult, not even on CW! There will always be stations waiting to work you.

Please support your Division. Be a competitor – it's a good way to spend a Saturday night and there are other contests to help you hone your skills.

Good contesting. 73 and see you in the RD 2000.

Ian Godsil VK3DID,
Federal Contests Co-ordinator

2000 Remembrance Day Contest

12/13 August 0800Z Sat – 0759Z Sun

Presented by Alek Petkovic VK6APK

Purpose: This contest commemorates the amateurs who died during WWII and is designed to encourage friendly participation and help improve the operating skills of participants. It is held close to 15 August, the date when hostilities ceased in the southwest Pacific area.

It is preceded by a short opening address by a notable personality transmitted on various WIA frequencies during the 15 minutes prior to the contest. During this ceremony, a roll call of amateurs who paid the supreme sacrifice is read.

A perpetual trophy is awarded annually to the WIA Division with the best performance. The name of the winning Division is inscribed on the trophy, and that Division then holds the trophy for 12 months. The Division also is given a certificate, as are leading entrants.

Objective: Amateurs in each VK call area will endeavour to contact amateurs in other VK call areas, ZL and P2 on **Bands** 1.8 - 30 MHz (no WARC). On 50 MHz and above amateurs may also contact other amateurs in their own call area.

Contest Period: 0800Z Saturday, 12 August to 0759Z Sunday, 13 August 2000. As a mark of respect, stations are asked to observe 15 minutes' silence prior to the start of the contest, during which the opening ceremony will be broadcast.

Rules:

1. **Categories:**

(a) High Frequency for operation on bands below 50 MHz

(b) Very High Frequency for operation on and above 50 MHz

(c) Single Operator

(d) Multi-operator

2. **Sections** within each Category are:

(a) Transmitting Phone (AM, FM, SSB, TV)

(b) Transmitting CW (CW only)

Note: Digital modes such as Packet, RTTY, AMTOR, PSK31 etc are excluded from the contest.

(c) Transmitting Open (a) and (b)

(d) Receiving (a), (b) or (c)

3. All amateurs in Australia, Papua New Guinea and New Zealand may enter the contest, whether their stations are fixed, portable or mobile.
4. Cross-band and cross-mode contacts are not permitted.
5. Call "CQ RD", "CQ CONTEST" or "CQ TEST".
6. On bands up to 30 MHz stations may be contacted once per band per mode, i.e. twice per band once using CW and once using Phone.
7. On 50 MHz and above, the same station in any call area may be worked, using any of the modes listed, at intervals of not less than two hours since the previous contact on that band with that mode.
8. Both single and multi-operator entries are permitted. To be eligible as a *single operator*, one person must perform all operating and logging activities without assistance of any type either personal or electronic, using his or her own callsign. More than one person can use the same station and remain a single operator providing each uses his or her own callsign, submits a separate log under that callsign and does not receive operating or logging assistance in any way during the contest.

9a. Multi-operator stations are only allowed one transmitter per band/mode at any one time. Simultaneous transmissions on different bands are permitted. Simultaneous transmissions on the same band but different modes are permitted.

9b. Automated or computer controlled

operation is not permitted. The operator must have physical control of the station for each contact. CW and Voice Keyers are permitted.

10. For a contact to be valid, numbers must be exchanged between stations making the contact. **Exchange** RS for phone and RST for CW, followed by three figures commencing at 001 and incrementing by one for each successive contact.
11. Contacts via repeater (including satellite) are not permitted for scoring purposes. Contacts may be arranged through a repeater. Operation on repeater frequencies in simplex is not permitted.
12. **Score:** on 160 m two points per completed valid contact; on all other bands one point; on CW double points.
13. **Logs** should be in the format shown below and accompanied by a **Summary Sheet** showing **callsign**; **name**; **address**; **category**; **section**; for multi-operator stations a list of the operators; **total score**; **declaration**: *I hereby certify that I have operated in accordance with the rules and spirit of the contest*; **signed**; **date**.
14. Entrants operating on both HF and VHF are requested to submit **separate logs and summary sheets** for each category.
15. VK entrants temporarily operating outside their allocated call area, including those outside continental Australia as defined for DXCC, can elect to have their points credited to their home Division by making a statement to that effect on their summary sheet(s).
16. **Send** logs and summary sheets to: RD Contest Co-ordinator, A Petkovic VK6APK, 26 Freeman Way, Marmion, WA 6020, by Friday 15 September 2000. Endorse envelope **"Remembrance Day Contest"** on front outside. Late entries will not be eligible.
17. Certificates will be awarded to the leading entrants in each section, both single and multi-operator; in each Division; P2 and ZL. Entrants must make at least 10 contacts to be *eligible for awards*, unless otherwise decided by the Contest Manager.
18. Any station observed departing from the generally accepted codes of operating ethics may be disqualified.

Determination of Winning Division

Unless otherwise elected by the entrant concerned, the scores of VK0 stations will be credited to VK7 and the scores of VK9 to the mainland call area that is geographically closest. Scores of P2, ZL and SWL stations will not be included in these calculations.

For each Division, an "improvement factor" will be calculated as follows:

(a) For transmitting logs only, HF and VHF "Benchmarks" for each Division will be established, against which its performance for the current year is judged. The same formula will be used for HF and VHF, inserting the appropriate figures:
B = 0.25P + 0.75L
where B = this year's benchmark, P = last year's total points, and L = last year's benchmark.

(b) For each Division, HF and VHF Improvement Factors will then be calculated. Once again the same formula will be used for both HF and VHF, inserting appropriate figures:
I/F = Total points (this year)/ Benchmark
where I/F = improvement factor.

(c) For each Division, the HF and VHF Improvment Factors will then be averaged:
Overall I/F = (HF I/F + VHF I/F)/2.

(d) The Division that achieves the highest overall improvement factor will be declared the winner.

2000 Benchmarks

These are the total scores that must be obtained by each Division to improve on its results of last year:

Div	HF	VHF
VK1	626	189
VK2	4339	64
VK3	3551	11342
VK4	3439	767
VK5/8	3747	1551
VK6	2845	4864
VK7	1856	875

Receiving Section Rules

1. This section is open to all SWLs in Australia, Papua New Guinea and New Zealand. No active transmitting station may enter this section.
2. Rules are the same as for the Transmitting Section.
3. Only completed contacts may be logged, i.e. it is not permissible to log a station calling CQ.
4. The log should be in the format shown below.

Example Summary Sheet

Remembrance Day Contest 2000

Callsign: VK3DID
Name: Ian Godsil
Address: 57 Nepean Highway, Aspendale, 3195
Category: HF/Single Operator
Section: Transmitting CW
Total Score: 1000

Declaration: *I hereby certify that I have operated in accordance with the rules and spirit of the Contest.*

Signed: Ian Godsil
Date: 30 August 2000

Example Transmitting Log

Remembrance Day Contest 2000

Callsign: VK1XXX
Category: HF/Multi Operator
Section: Transmitting Phone

Time (UTC)	*Band*	*Mode*	*Call*	*Nr Sent*	*Nr Rcvd*	*Pts*
0801	14	SSB	VK2QQ	58001	59002	1
0802	14	SSB	VK6LL	59002	59001	1
0806	14	SSB	VK5ANW	59003	59001	1
0808	14	SSB	ZL2AGQ	56004	57004	1
0811	14	SSB	VK4XX	59005	59008	1

Example Receiving Log

Name/SWL Nr: L33071
Category: HF
Section: Receiving Phone

Time (UTC)	*Band*	*Mode*	*Call*	*Nr Sent*	*Nr Rcvd*	*Pts*
0801	14	SSB	VK1XXX VK2QQ	58001	59002	1
0802	14	SSB	VK1XXX VK6LL	59002	59001	1
0806	14	SSB	VK5ANW VK1XXX	59001	59003	1
0809	14	SSB	VK7AL VK2PS	59007	58010	1

ar

No contest, but plenty of fun in a lighthouse

International Lighthouse/Lightship Weekend

NEWS ITEM FROM MIKE DALRYMPLE GM4SUC
Via Kevin VK2CE

Last year the International Lighthouse/Lightship Weekend took place from 0001 UTC on Saturday 21st August until 2359 UTC on Sunday 22nd August 1999, when 218 amateur radio stations were established at lighthouses and lightships in 39 countries. This year the period of the event is from 0001 UTC on Saturday 19 August until 2359 UTC on Sunday 20 August 2000.

The event is NOT a contest; each station decides how they will operate their station regards modes and bands. Participants are not committed to being on the air during the entire period - only as much as they can. There are no restrictions on aerials or power. We wish operators to enjoy themselves and have fun while making contact with as many amateur radio stations as possible. Some operators say fun - 5,000 contacts - OK, but we request that stations take some time to work the slow operator, the newly licensed and QRP stations. As available space in many lighthouses is filled to capacity, our activity does not have to take place inside the tower itself. Field day type set-up at the light or other building next to the light is OK. Permission MUST be obtained from any interested parties.

The event is used to obtain maximum exposure for our hobby. We invite the press and, QTH permitting, also the public and try to underline the obvious parallel between the international aspect in lighthouses, lightships and amateur radio. We might catch a future radio amateur while creating goodwill for the hobby.

We use the event segment of the 5 'Classic' bands with a centre frequency if conditions are bad, at least we have one place we can (try to) meet. We request that the centre frequencies are not used as primary frequencies but as a last point of call to other participating stations.

CW

80m	3.510 - 3.540 kHz	Centre 3.521 +/-
40m	7.005 - 7.035	7.021 +/-
20m	14.010 - 14.040	14.021 +/-
15m	21.010 - 21.040	21.021 +/-
10m	28.010 - 28.040	28.021 +/-

PHONE

80m	3.650 - 3.750 kHz	Centre 3.721 +/-
40m	7.040 - 7.100	7.051 +/-
20m	14.125 - 14.275	14.221 +/-
15m	21.150 - 21.250	21.221 +/-
10m	28.300 - 28.400	28.351 +/-

Because it is not a contest you can operate on any authorised QRGs as per your licence.

To assist other stations we request that participating stations add 'LIGHT' , 'LGT', LIGHTHOUSE' or 'LIGHTSHIP' after their call. UK stations normally obtain a GB callsign with the letter L in the suffix to assist other stations identifying them as a participating station in the event.

So come and join us in the fun of the weekend, establish a station at a lighthouse, lightship or maritime beacon. The more the merrier. If you decide to join us in the fun could you let me know the callsign you will use, QTH and QSL information. This will enable me to notify other stations and the media of your participation.

73s Mike GM4SUC

e-mail: gm4suc@compuserve.com

The North American co-ordinator for the event is Jim Weidner who has a very comprehensive web site showing the list of participants who have registered for this year's Event and also details and photos of last year's event www.waterw.com/~weidner/LH-day-table.htm

Local inquiries in VK may be addressed to Kevin vk2ce@amsat.org

ar

DX NOTES

Ross Christie, VK3WAC
19 Browns Road, Montrose 3765, Vic.
Email Vk3wac@aol.com

Disturbances to propagation normal for this point in solar cycle

The bands have been in good shape in the last month or two and I have been able to work some interesting DX in Africa and South America in late May and early June. Signals from Africa and South America are rare for me, normally I do not hear much from the south due to the location of my QTH. But shortly after this the bands took a downturn and were in a sorry state, from my QTH at least. Propagation must have been disturbed as I have been told that signals coming into VK over the poles have suffered from severe auroral 'flutter'. I suppose at this point in the solar cycle, severe disturbances to propagation are the norm.

There have been reports of spectacular aurorae in Europe and North America, being visible much further south than normal (Did anyone see any auroral activity here in VK?). In the UK, amateur photographers have been having field days (nights!) as far south as Oxford with some beautiful exposures of vivid green and orange curtains. My father, who is a keen shortwave listener and who lives 20km west of Glasgow, tells me that he has heard many stations from SM, ON, OZ, LA, DL on 6m SSB during the last couple of months. He uses modest equipment, a homebrew 6m converter fed from a 'Slim-Jim' cut for 6m and a Yaesu FRG8800 as a tunable IF. Admittedly, these countries are not great distances away from GM but you can imagine the amount of activity going on in Europe and the US under these conditions. And perhaps the best is yet to come for the Southern Hemisphere! Rumours have it that the peak of the cycle will not arrive until late 2000. If this is the case, we may yet see some good openings in VK during summer 2000/2001.

Another prominent amateur radio operator has vacated our ranks. Keizo Obuchi, JK1KIT became a silent key on 14th May 2000. Our condolences go to his family and friends, and to the radio amateurs of Japan, on the death of their Prime Minister Keizo Obuchi, JI1KIT. Mr Obuchi, whose nickname was 'the quiet man' was first licensed in 1975 and was a member of JARL. He was a keen amateur radio operator and a great enthusiast. I wonder if any VK amateurs have his call in their logbooks?

The DX

Some good DX is about to come on the air from some interesting places in the next few weeks. Have a listen on the bands and see if you can work them. If you do, drop me a line and let me know.

3W2LC, Mal (VK6LC) is returning to Vietnam for where he will spend the next 6 months. Look for him to be active from Vung Tau.

KH2, Gus, K4SXT, reports he has shut down his operation from Nimitz Hill, Guam as KH2/K4SXT and will be transferring to Bahrain. He plans to be move in late July and be set up on the air sometime in September. Gus enjoys the low bands, especially 160 metres.

JW, SVALBARD ISLAND. The Modum Group of NRRL (Norway) and a local Ham Group (LA7M) is arranging a one-week trip with 30 people to the Russian area of the Svalbard Islands during the period of July 6-13th. They will travel by boat from the Island airport to the Russian settlements of Barentsburg and Pyramiden.. The main callsign for the group will be JW7M. However, there may be individual participants who will exercise their right to use the CEPT licensing agreement and operate as JW/ homecall. For more information, please E-mail the group at dxpedition2000@dxpedition.org or, if this adventure piques your interest, take a look at the following web site, http://www.dxpedition.org

PI4TUE, Members of PI4TUE will once again be operating from Liechtenstein from 31st July till 16th August. Activities are planned for 2m through 160m plus 23cm. The group will be active on 6 metres most of the time.

TF/G3SQX, Starting 28th July Ed, G3SQX, will be active from Iceland. Ed will be participating in the RSGB IOTA Contest in the 24 hour CW category. He will be staying in Iceland until 6th August and will be active on CW only. QSL via G3SQX. Check out Ed's Web page at http://www.g3sqx.net

VQ9QM. Dale Strieter, W4QM, will be heading out to sea again in late June. He'll be leaving from Jacksonville, FL and plans to arrive on Chagos on approximately 30th July. Dale will be active on CW only on all bands for about 4 or 5 months as VQ9QM. QSL via W4QM.

Mark, KM6HB, says to look for him on the air from the South Cook Islands between 10th and 17th of July. He intends to be active, especially on RTTY, on 10m through to 40m. Callsign to be announced on arrival. QSL via KM6HB.

IOTA Activity

A reminder that the RSGB IOTA Contest takes place from 1200 UTC Saturday 29th July to 1200 UTC Sunday 30th July 2000. This contest now attracts more than 1000 participants annually so it is quite possible to work the 100 different IOTA islands required to qualify for the basic IOTA award during the 24 hours of the contest. Full details of IOTA contest rules can be found on the following web site http://www.g4tsh.demon.co.uk/HFCC/Rules-2000/iota.htm

Important note. If you plan to take part as an island station, please check new IOTA Directory 2000 to see that your island counts and that you have the correct IOTA reference number. If it is not

listed in the directory, it could be that your island IOTA status has been withdrawn.

AS-066 Alex, RU0LL, plans to be active from Putyatini Island (AS-066) during the last week of July. He intends to participate in the RSGB's IOTA Contest. Alex will be active on 6m through to 160m on CW, SSB and RTTY. QSL is to IK2DUW either via the bureau or direct to ARI Servizio quasi diretto Via scarlatti, 31 - 20124 Milano, ITALY.

EU-010 Jim, MM0BQI, will activate the island of Benbecula* in the Outer Hebrides (IOSA OH4) on July 27th – 31st as MM0BQI/P. Look for him to be active during the IOTA contest from the same 'winning location' (Jim's words) as last year.

EU-077 EA1GA/P will be active from Noro Island (EU-077) on 8th and 9th of July and then from Erbosa Islands from 12th and 15th of August. QSL via EA1GA.

EU-008 Operators GM3COB, GM3NIG, GM3UTQ, GM4FDM, GM4YMA, GM0NAI, GM0UKZ and 2M1EDM will be active as GM5V from the Island of Gigha for the upcoming IOTA Contest. For operation outside of the IOTA contest they intend to use the callsign GM5VG/P on all bands. The group will be running 400 watts on SSB/CW/RTTY/PSK31 and have plans to build a large antenna farm with monobanders (if possible). QSL via GM3UTQ.

EU-038 Members of the radio club "UBA" (ON4NOK) and "Radioclub Kempen K.A.R." (PI4KAR) will be active for a period before and during IOTA Contest with the callsign PA6TEX on Texel Island. QSL via ON4ALW, Ronald "Ron" Van Aken, Kapelstraat 5, 2330 Merksplas, Belgium or via the UBA (Belgian) Bureau.

NA-054 Joe, W8GEX, Ron, WA8LOW, Mike, N9NS and Mike, K9AJ will be active from Berry Is, Bahamas (NA-054) for the period 28th – 31st of July, including the IOTA Contest. Two stations will be activated on 6m through 40m, CW & SSB. The team will use the callsign C6DX during the contest and C6AJR outside the contest. QSL to W8GEX.

IOTA frequencies -

CW 28040 24920 21040 18098 14040 10114 7030 3530

SSB 28560 28460 24950 21260 18128 14260 7055 3765

Special Events and Dxpeditions

News just to hand, Tom Harrell, N4XP, and Garry Shapiro, NI6T, of the Kingman Reef/Palmyra DX Group (KR/PDXG) have confirmed that Dr. Chuck Brady, N4BQW, was due on the Atoll in the latter half of May. He was expected to be active during late May (did anyone in VK work him?). Chuck is one of the first operators of the KR/PDX Groups effort to activate KH5 and KH5K over the coming months. He will ensure the safe arrival of all the equipment forwarded to Palmyra Atoll earlier. Chuck will operate when he has spare time, as his official function is to assist The Nature Conservancy's establishment of a "base camp" on Palmyra. It has been rumoured that future operations from this site may be very unlikely due to it being declared an as international heritage site. These early visits will complete the necessary preparations for both additional activity on Palmyra and the planned major effort to Kingman Reef in October.

The DXpedition to St. Peter and St. Paul Rocks has once again been postponed. It seems that transportation is the only factor holding up this operation. The two-man team is ready and has the funds, but lack the means of transport. They are awaiting the Brazilian Navy to allocate space aboard one of their ships. The group is now hoping to arrive at this semi-rare location in July and hopes to have some kind of a confirmation of transport by mid June. RTTY will also be available on this trip.

A group of French amateurs are heading to Bhutan this September. The operators include Alain, F6ANA; Denise, F6HWU; Alain, F5LMJ; Vincent, F5MBO/G0LMX and Gerard, F2VX. They intend to fly from Paris to Thimphu via Bangkok on 1st of Sept 2000 and return to Europe on 15th of Sept. Gerard says there will be 9-10 days of operating. The group, also known as the Clipperton DX Club, will use the antennas and coax feeders left behind on the roof of the Pinewood Hotel by the recent A52A operation. The radio equipment will consist of a TS-50, FT-706 (IC706?), and FT-757, but no high power amplifiers. The exact callsign/s to be used is not known as yet, but will be released as soon as they find out.

VP6BR Mike, KM9D. If you missed VP6BR then don't despair. Mike, who also operated as ZR0ZY from San Ambrosio, is currently sailing to Easter Island and plans to travel further into Oceania. He hopes to be active from Pitcairn Island later in the year. QSL via OM2SA.

E4, PALESTINE. Miro, S51GL, is preparing a Dxpedition to Palestine for this autumn. The main objective of the operation is to put Palestine on air with digital modes. He hopes by setting a good example he will be able "to motivate the students at the Gaza College, E44DX, to do the same; since they have already the basics of ham radio and it will be nice to complete their education." While he is there he wants to operate on the WARC and 50 MHz bands. He hopes that the operation will promote friendship between Palestine, H.K. of Jordan, Lebanon and Slovenia and of course, the rest of the world. For more information and updates, go to Miro's Web page at: http://www.qsl.net/s51gl/

QSL Information

3A2MG via F9JS

5N3NDP via IK5JAN

8M2000 via JARL

CE0Z/LU7FOM via LU7FOM, Victor R. Goldin, Pasaje Machado 5878, 2000 Rosario SFE, ARGENTINA

EP2AC via RV6AB

RA0LOM/0 via UA0MF

Z33Z via Z31RB

AX3ITU Send QSLs to this special event station to either one of the following addresses: Eastern and Mountain District Radio Club (EMDRC) - P.O. Box 87, Mitcham Victoria, Australia 3132 or VK3 Bureau, 40G Victory Boulevard, Ashburton Victoria, Australia 3147

EO55UK This is a special event station celebrating the 55th anniversary "Victory of Second World War", QSL to UT4UO.

EX8MF Nikolaj Bubnov (ex-UM8MFO) informs us that the Amateur Radio Union of Kyrgyzstan (ARUK) has a new address, P.O. Box 745, Bishkek, Kyrgyzstan 720017. They also have a web site at www.qsl.net/ex9hq

EO55FI Another special event station celebrating the 55th anniversary "Victory of Second World War", to UX3FW: Yurij Kucherenko, P.O. Box 62, Izmail, 68600, UKRAINE.

SV1UN QSL to Bill Sarafopoulos, Palia Geotrisi 1, Avlon 19011 GREECE.

T92000 Boris, T93Y, informs us that he has received his QSL cards for the T92000 operation from the printers in Germany. The cards are full colour and he feels those who will receive them will be very pleased indeed. QSL cards that are to be mailed direct will be dispatched before he leaves for the Dayton2000 Hamvention in the USA, and cards going via the bureau will also be delivered to the T9 bureau before he leaves. You can request one of his cards (if you have worked T92000) by contacting him via email at bknezovi@utic.net.ba Boris is also the QSL manager for the following calls 5B4/T93Y, T93Y, T94EU and T9DX. An email to Boris will get you a card for a contact with one of these callsigns.

ZL8RI, ZL9CI The Kermadec DX Association has changed the address for ALL QSL cards for these DXpeditions. All cards should go to Ken Holdom, ZL4HU, Kermadec DX Association, PO Box 7, Clyde, Central Otago, New Zealand. Note, this is the ONLY address.

Tito, LU7EE, gives the following QSL information for a few Uruguayan stations;

CX1JJ, CX1JK, CX3JE via P.O. Box 68164, Salto 50000 Uruguay or CX2AM.

CV9AM (during May 2000) via CX2ABC, P.O. Box 950, CP 11000 Montevideo, Uruguay.

CV7V via CX4ACR

Vasilij, RW6HS, advises that cards to the following stations go direct to their respective addresses.

4J4K - 370000, BAKU, P.O. Box 89, AZERBAIJAN.

4K7Z - 370000, BAKU, P.O. Box 18, AZERBAIJAN.

Recently heard DX

Les Hawkins, VK4DA, Hans Kiesinger, VK4/HE9RFF and Brian Lavender, VK4LV, have all sent me extracts from their log books. They have all logged some impressive DX, and just to prove that all those exotic callsigns are not heard only overseas, here they are.

Les, VK4DA

20m Time GMT

EO55IX	06:00, QSL via UR6IM
PY500	03:00, QSL via PP1CZ
9H1GZ	14:00
CP2A	21:20
E3/OK1FHI *	03:30
EA9FU	04:20
EI5HE	05:40
EA8/SM5AXQ	08:15
HC8N	05:30
ZB2AZ	06:00

15m Time GMT

EY8MM	03:00, QSL via K1BV
XV5JY/p	07:30, QSL via JA1KJW
HS9CA	08:15
OH0/LY2TA	09:40

Hans, VK4/HE9RFF
20m CW
VY1JA (QSL via KB5IPQ)
BK2000WF
VK9LX/mm
8N2000
3B8FG
3B8MM
RH1F (QSL via RV1AC)
RH1C (QSL via RV1AQ)
RH1ARS (QSL via RV1AE)
FW/G3SXW.

20m SSB

5N2BHF
9A4A
V51E
5N0WFU
C31PR
VK9NYR
N4BQW/KH5 (Palmyra Island)

17m CW

ZL3NM/T16
RM0M (AS-066)

Brian, VK4LV

20m CW	20m SSB
XV5JY	9A4A
HR1LW	CT1/DJ0MW
NH6D/KH4	CE0Y/LX1NO
V51AS	ZF2MU

TE6U
SV8/I2YYO
AA1AC
FP5CJ
MC0CDX
ZD7VC

17m CW

FW/G3TXF
OJ0VR

17m SSB

VK9WI

15m CW	15m SSB
5B4/RW9UP	XX9TKW
OH1MM/OJ0	VP2EY

DX Cluster activity

I mentioned in my first column that I intended to set up a DX cluster monitor in the shack to monitor what was happening on the bands. Well, I have made some progress towards achieving this goal. A FM900 has been converted and tuned up for the 2 metre band, the software to run on the shack computer has been acquired and I have homebrewed an interface unit to control the audio levels to and from the TNC. However, I have not located a TNC yet. The local Ham supplier is awaiting a shipment from the USA, so it shouldn't be too long till the setup is up and running.

Computers in the shack are all very well but it doesn't (and shouldn't) make up for listening in real time on the air. The various DX nets are great places to get a feel for how the bands are performing and what paths are open to where. Listening in to the ANZA net on 14183 kHz at 05:00z daily will give you a good idea of what is happening. I managed to work V51GB, Namibia and Z22JE, Zimbabwe, while on the net.

Round up

Great news for those who need Midway Island. Bill, NH6D, and his wife have moved to this Pacific Island and expects to be there for an extended period of time. He has a new job and house. A G5RV and 160-meter antenna have been installed and he is awaiting delivery of a 1kW amplifier. QSL via N6FF.

Michael, 5H3MS, says a call district map for Tanzania can be found at the following web site, http://www.qsl.net/5h3ms/5h3mszon.html. The names of the districts and the respective callsigns are as follows;

5H1 - Zanzibar and Pemba Island
5H2 - Arusha, Kilimanjaro, Tanga
5H3 - Coast, Dar Es Salaam (incl. Mafia Island)
5H4 - Morogoro
5H5 - Lindi, Mtwara, Ruvuma
5H6 - Iringa
5H7 - Mbeya
5H8 - Kigoma, Rukwa, Tabora
5H9 - Kagera , Mwanza, Mara, Shinyanga (including Ukerewe Island)
5H0 - Dodoma, Singida W

A5, BHUTAN. The Bhutan 2000 DXpedition Team, A52A, has now gone QRT as of the 12th of May. Details on their web site show that the team made a total of 82,087 QSOs. CW = 42088, SSB = 37263 and RTTY = 2736. A breakdown by band is shown below.

160m	80m	40m	30m	20m	
CW	143	970	2038	3107	9989
SSB	0	174	1275	0	9278
RTTY	0	0	1	0	953
17m	15m	12m	10m	6m	
CW	6843	11177	4247	3476	98
SSB	6525	12592	3513	3768	138
RTTY	0	1477	0	305	0

My personal bias might be shining through here again, but the above figures indicate that CW is the most efficient if not the most popular mode amongst DX'ers. No doubt the quick exchange CW makes possible is important in maximising the number of stations logged/worked, but I also suspect that the dedicated operators enjoy pounding the brass. A cost analysis of the recent A52A operation indicates the cost per operator to be in the region of $3,400. This is a lot of money in anyone's language and donations from clubs and individuals would be very welcome.

And finally for this month. Neville Cheadle, G3NUG, sends details of a new book on DXpeditioning that has recently been published called "DXpeditioning - Behind the Scenes". Wayne Mills, N7NG, has reviewed the book and comments: "The well-crafted 'DXpeditioning - Behind the Scenes' offers a comprehensive view of virtually all aspects of a major expedition for the traveler and the DXer alike. From the early planning through to QSLing, this book offers a variety of thoughts and suggestions on every facet of the DXpedition. It is by far, the most complete 'how-to' reference available." Chapter summaries can be found on the Nevada web site at http://www.nevada.co.uk/book-DX.html the book can also be ordered from the web site. All the surplus proceeds from sales of this book will be used as part of the funding for a major Dxpedition, probably in March 2001

Sources

Special thanks and recognition are due to the following people and organisations. Les Hawkins, VK4DA; Hans Kiesinger, VK4/HE9RFF; Brian, VK4LV; Tedd, KB8NW; Tomas NW7US; The OPDX Bulletin; 425 DX News and The Daily DX by Bernie McLenny, W3UR.

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Special AX8IARU Region III Event Station

The International Amateur Radio Union Region III conference will be held in Darwin, Australia, 28 August to 1 September, 2000.

More than 100 delegates from radio societies in the Asian and Pacific regions are to attend the conference hosted by the Wireless Institute of Australia, and discuss a wide ranges of regional and global issues affecting amateur radio.

At the conference's hotel venue a special event station AX8IARU will be on air activated by members of the Darwin Amateur Radio Club, and conference delegates. A special QSL card is to be available.

Listen for AX8IARU on the DX bands using both CW and phone.

IARU RIII Conference Media Officer,
Jim Linton VK3PC

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Walking 'On Air' from Sydney to Brisbane

continued from page 29

weather was beautiful, solid sunshine from a clear blue sky, with the temperature in the high 60'sF (~20C). Can this be winter? Not for me anyway, as I now had on my full summer walking togs, thin sweat shirt, sleeves rolled up, shades and bush hat.

The road was very quiet, the reason was obvious whenever it came close to the traffic laden Sydney to Newcastle Freeway. That situation continued as I followed the Old Pacific Highway through Gosford and Wyong before branching west through Morisset to meet some distant relatives in Toronto.

Unfortunately, the two months' training with the compost laden pack hadn't quite paid off, as my left knee started to play up on Day 3, especially when going down hill, although on the bright side, no blisters - yet.

At least it was another topic of conversation for the small group of regular contacts that was building up via the repeaters, though I suspect it was a reason for doubting the sanity of 2STB.

Day 7, and a few km south of Cardiff, I exchanged the bush hat for a Westlakes Radio Club baseball cap, after meeting Robert, VK2TRA. I then had lunch with Grahame, VK2FA, who later that afternoon very kindly showed me round the area, even managing a contact to UK via his 20m mobile set-up, before inviting me to his QTH for dinner.

The evening was spent at the Newcastle Radio Club, where we heard a very interesting talk by the intrepid local explorer Graham Burgess on his adventures in Antarctica and Cape Horn, which made my little strolls look like a short walk to the shops.

An hour or so's chat about all things radio then back to Grahame's QTH to send a progress e-mail home and an Internet QSO with the States, before finally getting my head down at 0215. I was glad to get back on the road to Raymond Terrace for a rest!

However, this was possibly the worst day for the knee, which slowed me down sufficiently to prevent a visit to the Westlakes Club after encountering Steve, VK2TST, and Club President Geoff, VK2EO on their way to the meeting.

I was also becoming a little concerned that I might not complete the approaching two longest scheduled days of Karuah to Bulahdelah to Nabiac, both over 40kms, the latter including the oft warned-about "small incline" of O'Sullivans Gap and the associated narrow, twisty road.

In the event, the knee began to improve, although I did develop a small blister on my right heel, and I successfully made both destinations before dark, having started out at first light.

Walking through the hilly terrain, I was impressed by the coverage of the Cabbage Tree repeater, which I first started to use on leaving Raymond Terrace (Day 8) and would eventually lose north of Kempsey, ten days later.

Its large service area meant that I could keep in touch with most of the people I'd contacted so far, as well as meet new friends on the road ahead.

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Part 2 continues next issue

REPEATER LINK

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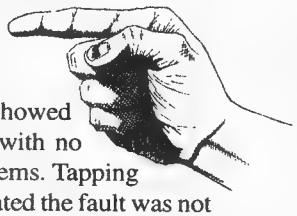
The Fickle Finger of DTMF Frailty

Amateur Radio, October 1998 described a DTMF decoder on page 18.
The circuit decoded DTMF tones using the MC145436 IC followed by a BCD to 16 digit decoder chip, the 4514. All fairly standard, and I had put the two IC's together to produce the final logic output of digits 1 to C (D cannot be decoded due to its BCD code being 0000).
All worked well except for an occasional funny. I use this circuit for controlling various remote devices, such as a 2.4 GHz television repeater for electronic news gathering (ENG). Many live stories on the television news have to go via a high vantage point repeater. This typically has a 2 foot dish that has to be panned and tilted so as to point at the ENG vehicle. Other functions, such as "on" and "off" can be controlled via DTMF as well.

The problem with the DTMF decoder described is that some would not always work as they should all the time. For days on end the circuit would work without a fault, decoding every digit correctly every time. But every now and then the decoder would either decode the wrong digit or not decode at all. One decoder board's difficulties could not be resolved despite checking and re-checking the board. Every solder joint was re-soldered, even though the problem did not appear to be mechanical. In the end another board was constructed and this one worked.

Now comes the strange one. The remote pan and tilt of a small camera, required a DTMF decoder. A circuit was made up from the (mostly) trusty DTMF decoder design. It drove a series of 4 relays for the left, right, up and down action of the camera, relay 1 turning on when digit 1 was pressed etc. Well, it worked at first, then became unreliable with Digit 1 pressed and relay 3 operated some of the time. It would work for long periods and then behave randomly. Any digit between 1 and 4 could result in any relay between 1 and 4 operating, but not always corresponding correctly.

Magic Finger



An inspection showed correct wiring with no soldering problems. Tapping the board indicated the fault was not mechanical, but revealed a strange phenomena.
As soon as a finger came near the circuit board, the DTMF decoder behaved correctly! Yes a magic finger coming within 2 centimetres of the board, even without touching, fixed the problem . Even with the wrong relay activated, waving the magic finger near the board caused an instant correction! Extra capacitor bypassing was installed all over the board with no result.

Including a finger permanently on or near the circuit board posed logistic problems. Perhaps other non-animal material might work. Sure enough a screw driver worked as did an all-plastic tuning tool. Any object coming within a couple of centimetres of the circuit board, and in particular the 4514 DCD to 16 decoder, fixed the problem. Especially so near the pin 1 pin 24 end of the 4514.

But if the object was laid on the circuit board and left, the problem persisted. It appeared that human contact was needed. Many readers would be saying the human body is a big pick-up device and is just an extension of the human body. This turned out to be right.

Now for a close look at the circuit. There must be a design fault as these boards had shown sporadic unreliability.

The problem did not appear to be lack of bypassing. All pins were connected as they should be, except pin 1 on the 4514. as it went nowhere. Sure enough, measuring pin 1 with a digital voltmeter showed zero volts. But would you believe after measuring pin 1 on the 4514, the circuit refused to work at all! No amounts of trying, along with turning the power on and off several times could make it work!

Pinning down the No 1 culprit

I'm sure the smarter among us would have found this clue many hours before, or designed the circuit correctly in the first place. By placing the multimeter on pin 1, a very high impedance CMOS input, pin1 had been grounded, even with the high impedance of the mutimeter. Pin 1 remained at zero volts even after the mutilmeter probe was removed. Just what did pin 1 do? Looking up the CMOS information showed pin 1 was a strobe input to a latch circuit. The BCD inputs go through this latch, which is in simple terms an on/off switch allowing the BCD logic into the rest of the 4514 IC.
Ahh it was all clear now. Leaving pin 1 floating was looking for unreliable operation. Even though the strobe function was not required for operation, it was important that the strobe input control of the latch circuit be told what to do. Zero volts on the strobe input inhibits the BCD from being processed by the 4514 IC and a positive voltage passes the BCD information into the rest of the 4514 for processing.

Connecting pin 1 to the supply voltage solved all the problems and did away with the magic finger. So simple when understood but it incurred many hours of frustration. The lesson, make sure all pins on an IC are correctly connected even when not used. Yes I know we all know this but sometimes expediency results in shortcuts and you pay . If you have made up the DTMF decoder from October 1998 Amateur radio, tie pin 1 on the 4514 to the 5 volt supply rail.

More Time

The repeater Controller information referred to in June is not yet available and will be published as soon as possible. Another unit has gone into testing on a new UHF repeater in Perth, VK6RVP

SPOTLIGHT on SWLing

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Always surprises on Shortwave

I have listening for unusual signals which pop up around this time of the year. Disappointing so far, nothing has been observed. But there has been much happening on shortwave.

The Darwin transmitters were leased to an English Christian fundamentalist group and Radio Australia shut out from using their previous site near Darwin. The ABC vigorously protested, but the Government seemed to think that the inadequate facilities at Shepparton and at Brandon were sufficient for Radio Australia.

At the same time, there were two coups in the South Pacific, the first in Fiji. Gunmen seized the Parliament complex, holding senior officials hostage to restore domination of the indigenous population over the substantial Indian minority. At printing, the situation is unresolved.

Fiji is not on shortwave and has not been active since the early seventies. The foreign media has been the major source of news of the conflict in Suva, although a domestic website was providing excellent local information..

The second coup was in the Solomon Islands to the north of Fiji. This has not captured the attention of the world's media. There has been an ongoing struggle between two ethnic groups on the main island of Guadacanal, of which Hoonoraria is the capital. The island was the site of a major battle in WW II.

A tribe from the neighbouring islands came to the main island after the war. The local people resent the newcomers obtaining land, hence the dispute. The situation on Guadacanal has deteriorated.

The Solomon Islands have been on shortwave for many decades, being easily heard in the evening hours in Australia on 5O2O kHz. On sign off, they relay the BBC World Service overnight. It was ironic to hear news of the coup via these facilities seized by the rebels.

Bouganville is another hotspot. It too has seen another ethnic conflict between the Nuigini government and local inhabitants wanting their own nation. A costly civil war was ended with Australian and New Zealand participation in a supervising peace force.

Shortwave was extensively used in a propaganda war between Port Moresby and Bouganville. A clandestine operation was mounted on the island and also the Solomon Islands, known as *Radio Free Bouganville*, using a converted Ham transmitter. I have no details on its current status. It was on 3899 kHz but I have not heard it for some time. A clandestine station backed by the Nuigini government was based at Rabaul and known as Radio North Solomon. This is active on the 90-metre tropical allocation and is no longer classified as a clandestine station. It may have been moved to the nearby Buka Island, just off Bouganville.

Nuigini itself is somewhat unstable and it would be interesting to monitor the various provincial stations on the 90-meter allocation plus the national station on 4890 kHz from Port Moresby. Next door, the Indonesian province of Irian Jaya has been recently renamed West Papua. There has been a guerrilla war going on since Indonesia got this former Dutch colony in 1962. The several Indonesian stations located in West Papua are easily heard here in Australia.

Conflict continues within Indonesia, particularly at Aceh, on the northern tip of Sumatra and also on the island of Ambon in the Molucca Islands. The political situation in Jakarta is very fluid. The national station is heard around the clock on 1515O kHz in Indonesian. Various provincial stations can be easily heard, on tropical band allocations.

The Philippines are also unstable with an insurrection on the main southern island from Islamic militants. Tourists were kidnapped from a Malaysian resort and forcibly taken to a Filipino island as hostages. I am informed these rebels use SSB transceivers on HF.

This region is historically a source of piracy, with only the technology changing over the centuries. Now pirates hide out among thousands of small islands and use fast craft to get to vessels, overpower or murder the crew and take the cargo, money and occasionally ship. The local navies are too small and ill-equipped to cope.

The Strait of Malacca, between Malaysia and Indonesia is a site for these pirate attacks, as is Borneo and the Philippines. The pirates use HF for their communications and operate on any frequency they choose. They relocate often and use local dialects. A former Intruder Watch co-ordinator ascertained that they were using 20 metres and taped their conversation, which was translated and confirmed as pirate communications.

Piracy was also a problem off China but the authorities cracked down very severely and arrested the Indonesian and Filipino perpetrators.

A few years ago, pirates attempted to seize a Russian cargo vessel near Manila, but it turned out to be a Naval vessel and they were beaten back. The International Maritime Organization is concerned at the proliferation of piracy which is severely affecting commerce within this region.

This winter, propagation on the lower frequencies around the local midday has been disappointing, yet propagation on the higher frequencies has been exceptional. I am hearing literally thousands of low powered stations between 25 and 30 MHz.

Some channels have continuous heterodynes and quite extensively used. Some are even using FM for their communications. Most of them are using Asian languages but there are quite a number of Spanish speaking stations also. These are probably located in Latin America. I also note that the 18 MHz amateur allocation is open worldwide during daylight hours.

Well that is all for July. Keep listening and see what you can hear because there are always surprises to be found on shortwave.

ar

POUNDING BRASS

S.P. Smith VK2SPS
4/6 Taranto Rd Marsfield NSW 2122
(H) 02 9876 8264 (M) 0419 602 520

Pounding Brass Article Menu

Since taking over this column some years ago I've had numerous requests for certain articles to be repeated.

If the response is good for a particular article, I will repeat it at a later date with updated information if I think it is required.

Here is a list of articles, which appeared in this column, starting with the first issue and running through to the current issue (1 to 83). Due to space limitations part two of this article will appear next month.

Issue	Month	Year	Article Contents
1	July	93	Introduction about myself
2	Sept	93	Learning Morse Code
3	Oct	93	Samuel F.B. Morse .
4	Nov	93	Overview of the American Telegraph
5	Dec	93	How the Telegraph came to Australia – part 1
6	Jan	94	- part 2
7	Feb	94	140 Anniversary of the first Australian Telegraph circuit
8	Mar	94	Types of codes ie 1832, 1838, 1844, Bain & 1851
9	Apr	94	Letters from members
10	May	94	Practice Nets
11	June	94	Victorian Morse Nets
12	July	94	Victorian, Sth Aust & Qld Morse Nets
13	Aug	94	Learning Morse "Morse Cassettes"
14	Sep	94	WIA Morse Cassettes
15	Oct	94	Morse Programs, British Morse Keys & QRP News
16	Nov	94	Sydney Morsecodians Fraternity
17	Dec	94	IC's 8043, 8044, M, B & ABM Versions
18	Jan	95	Iambic Paddles
19	Feb	95	Circuits relating to the 8044 ABM chip
20	Mar	95	Poem & movies which include morse code
21	Apr	95	Book review on J-Keys also Passive LC Filter Kit
22	May	95	Pt 2 on Filters plus circuits & construction
23	June	95	Not included
24	July	95	Miscellaneous subjects
25	Aug	95	Book Review "Story of the Key"
26	Sept	95	Telegraph Poems
27	Oct	95	CW Operators QRP Club. Introduction to Low Key
28	Nov	95	Fist Club of the UK
29	Dec	95	NSW Morse Practice Net VK2BWI
30	Jan	96	Book Review "The Secret of Learning Morse Code" by Mark Francis G0GBY
31	Feb	96	Chemical Telegraph
32	Mar	96	R.S.T System plus Key clicks & chirps
33	Apr	96	High Speed Telegraph "World Championships"
34	May	96	Home made Key by Dr J. Lycett G0MSZ – part 1
35	June	96	- part 2
36	July	96	Restoring Knobs & Thumb pieces on Keys & Paddles
37	Aug	96	Introduction to Manual, Semi-Auto & Electronic Keys
38	Sep	96	What to look for in a Paddle
39	Oct	96	Bencher Paddle. History, mechanics & adjustments
40	Nov	96	QRP Club of Ireland

Until next month, Best of Wishes

Stephen P. Smith VK2SPS

Many a slip on the way to the true story

Part 2

The Initial Years of the Wireless Institute of Australia (WA)

(continued from last month's AR)

D. Handscomb, VK6ATE,
P.O. Box 39, Quinns Rocks, W.A, 6030,
Ph: (09) 9305 7297

The Tasmanian Division was formed in June 1923 so the organisation could then truly be called "The Wireless Institute Of Australia".

Another example of Historical inaccuracy in Wireless Institute matters came to light as I was looking back through some early copies of *Amateur Radio Action* in an account of the origins Vol.3 No. 7 (also in *Amateur Radio* October 1984, Page 10) is an account of the origins of the VK/ZL Contest, and a copy of the Certificates warded for the Centenary Contest of 1934. At the bottom, it quite clearly (and, in my opinion, erroneously) states "WIA founded 1914".

The situation at Federal Level, I conclude, especially in those early days is just as inaccurate. In November 1923, The Chief Manager of Telegraphs & Wireless in Melbourne (Mr. Jim Malone) had written to various Scientific Institutions and Wireless clubs, suggesting the formation of a Council, or Executive, with whom he could consult, knowing that it was representative of experimental interests throughout Australia. A meeting was called by Professor Ross (at that time he was Honorary President of the WIA (WA Division) for December 17th 1923. It was attended by a large number of members of the Wireless Institute as well as representatives of The Wireless Development Association, Subiaco Radio Society, Mt.Lawley and Fremantle Radio Clubs (being those clubs in existence at the time) Mr.G.A. Scott (Radio Inspector of W.A) also attended by invitation the result being the formation of "The Committee of Affiliated Radio Societies of WA".

Similar meeting had no doubt been held in the eastern states. As a result, a Convention was held in Melbourne on May 16th 1924, WA being represented by Mr. Howden 3BQ and Mr. Cox 3BD as proxy delegates.

The next (2nd) Convention Of The Wireless Institute Of Australia was held in Perth from August 7th to 8th 1925, in the Conference Room at 6WF

- Mr B Holt President of the WIA (W-A-Division) was Chairman.
- Mr W Phipps (6WP) was Proxy Delegate for Queensland.
- Mr W E Coxon (6AG) and Mr.A.E. Stevens (6BN) were WA delegates.

From interstate:

- Mr C E Ames (5AV) represented South Australia.
- Mr H W Stowe (2CX) represented New South Wales
- Mr B J Masters (3LM) represented Victoria
- Mr P O Fysh (7PF) represented Tasmania
- Mr J Park (6BB) acted as Secretary
- Mr F Goldsmith was the official Reporter. (He later became VK6FG)

There were 27 items on agenda, the main one undoubtedly being Item 13:

"The uniformity of the Institute's rules and the formation of a Federal Executive."

The opening of the 3rd Session of the Convention (Saturday August 8th) began with Mr. Masters proclaiming:

"I wish to move that we immediately form a Federal Executive of the Wireless Institute of Australia".

He went on to explain, "To form a Federal Executive, we must have uniformity of the various constitutions of the states. As far as the Federal Executive is concerned, I would suggest: President, Secretary and Treasurer and a Board to be comprised of one representative from each state".

Much discussion followed as to the election of Federal Officers.

- Mr Stowe (2CX) nominated as President: Mr Phil Renshaw 2DE, the motion being supported by Mr.Masters. (3LM)
- Mr Stevens (6BN) nominated as Treasurer: Mr Stowe (2CX)

Mr. Masters moved that, "This being the first election of the Federal Executive the election of Secretary be left in the hands of Mr. Stowe in conjunction with the President (Mr. Renshaw) to be dealt with when Mr.Stowe returns to New South Wales: It is no good nominating a man unless we know he is willing to act." Presumably, Mr.Renshaw had been approached beforehand as to the likelihood of his being nominated as the First President of the Federal Executive.

Yet, in The W.I.A. Book Vol.1 (Page 12) under the heading "Federal Presidents" we see that the Federal President for 1924 (the 'year' shown meant the last or major part or all of the

year!) was H K Love 3BM, and the Federal Vice-President/Vice Chairman of the Executive was Ross A Hull 3JU,

If, as is noted in the minutes of the 2nd W.I.A. Convention, held in August 1925, "This being the first election of the Federal Executive" (said Mr. Masters), then how could Mr.Love & Mr.Hull have been Federal Chairman/Federal Vice President *the year before the Federal Executive had.been suggested*?

Please don't misunderstand me, I would do nothing to detract credit from these two worthy gentlemen, but were they appointed for 1926 at the 3rd Convention? Certainly, Mr. Holt was *not* the Federal President for 1925. It was pointed out in Perth that WA would cease to be the centre of the Institute once the Convention was finished. Mr Holt was Chairman of the Convention only because he was President of the Institute in WA. However, he *was* appointed the. Federal Councillor for WA by the local branch for 1925-26. Just how much this involved is not clear, but neither he nor indeed anyone else from WA was to attend another Convention, probably until 1938.

Back to the 2nd Convention. After deciding on the composition of the Executive discussion turned to the location of the 3rd Convention, Mr Masters moved that it be held in Sydney, next year "about July". He went on "Some of the eastern states have been put to great expense in coming over to WA. If we hold it in Sydney, we may have a chance of bringing in Queensland".

Who Was Elected The First Secretary Of The Institute ?

And what of further conventions? I have been able to fill in a few gaps but there are many more questions to be asked. if anyone is able / prepared to help me with information, relating to the development of experimental/amateur radio in wa (vk6) this would be most gratefully welcomed. i would also be grateful for any information / recollection /qsls etc. connection with Wally Coxon (sk) ?/ XYK/6AG/OA6AG/VK6AG.

I would like to thank Colin VK2DYM for information provided so far, and for continued encouragement in researching and writing about The Development of Wireless in Western Australia.

My thanks also to the Council of the Wireless Institute of Australia (VK6 Division) for allowing me access to the Minutes of the Division.

Any opinions expressed during this article are solely those of the author

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HEALESVILLE AMATEUR RADIO GROUP Inc.

HAMFEST

The Club has decided not to hold our HAMFEST in October 2000
Instead it will be held on the last weekend in

February 2001

Radio and
Communications
Incorporating AMATEUR RADIO ACTION and CB ACTION
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Hey, we've gone to ***FULL COLOUR!*** Check out our lead story in the August issue, on sale July 26

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vk3ce

HF PREDICTIONS

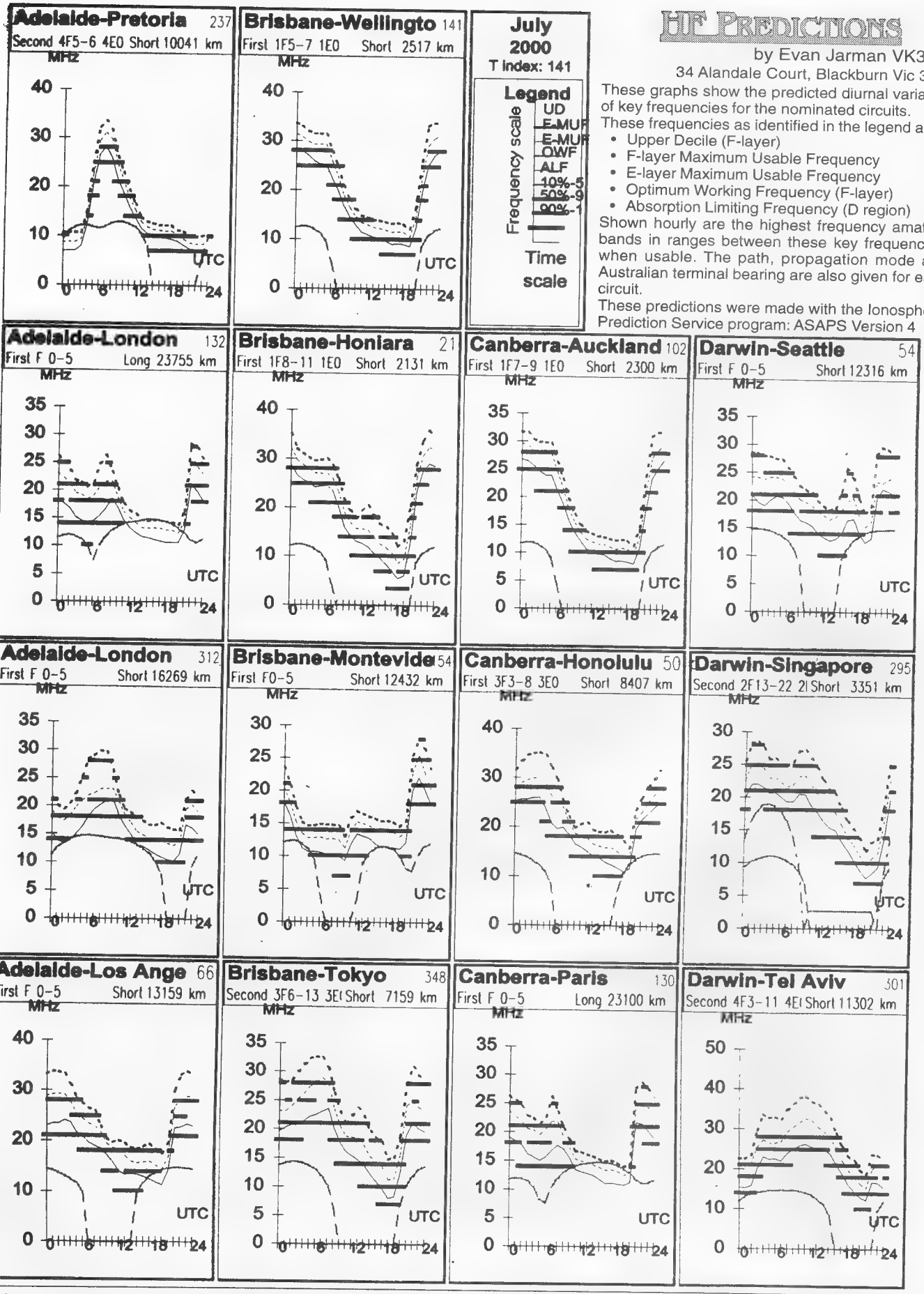
by Evan Jarman VK3ANi
34 Alandale Court, Blackburn Vic 3130

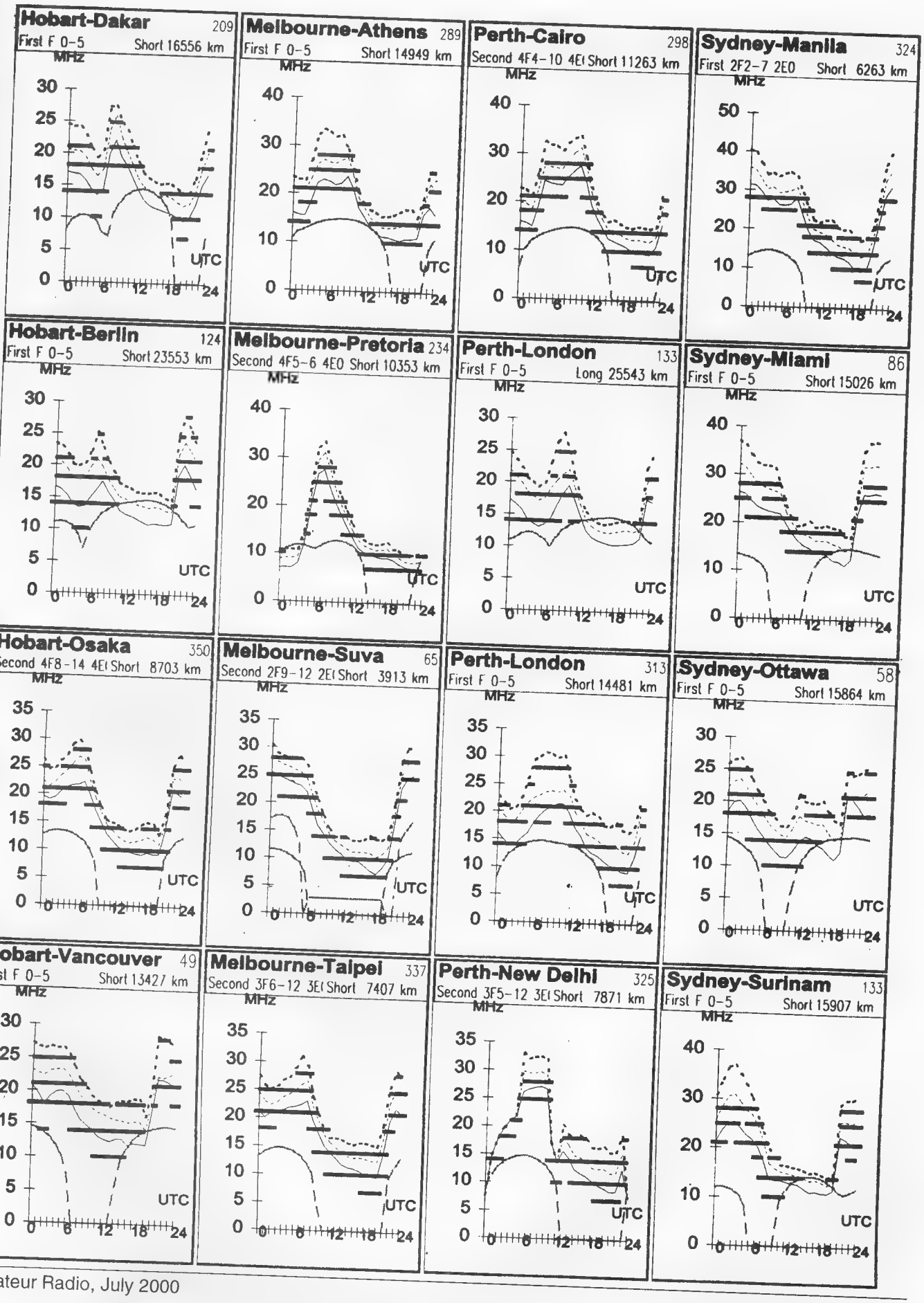
These graphs show the predicted diurnal variation of key frequencies for the nominated circuits. These frequencies as identified in the legend are:-

- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.

These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4




Hobart-Dakar 209
First F 0-5 Short 16556 km
Melbourne-Athens 289
First F 0-5 Short 14949 km
Perth-Cairo 298
Second 4F4-10 4E Short 11263 km
Sydney-Manila 324
First 2F2-7 2E0 Short 6263 km
Hobart-Berlin 124
First F 0-5 Short 23553 km
Melbourne-Pretoria 234
Second 4F5-6 4E0 Short 10353 km
Perth-London 133
First F 0-5 Long 25543 km
Sydney-Miami 86
First F 0-5 Short 15026 km
Hobart-Osaka 350
Second 4F8-14 4E Short 8703 km
Melbourne-Suva 65
Second 2F9-12 2E Short 3913 km
Perth-London 313
First F 0-5 Short 14481 km
Sydney-Ottawa 58
First F 0-5 Short 15864 km
Hobart-Vancouver 49
First F 0-5 Short 13427 km
Melbourne-Taipei 337
Second 3F6-12 3E Short 7407 km
Perth-New Delhi 325
Second 3F5-12 3E Short 7871 km
Sydney-Surinam 133
First F 0-5 Short 15907 km
MHz
UTC

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- Hamads may be submitted on the form on the reverse of your current Amateur Radio address flysheet. Please print carefully, especially where case or numerals are critical.
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- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at $25.00 for four lines (twenty words), plus $2.25 per line (or part thereof), with a minimum charge of $25.00. Cheques are to be made out to: WIA Hamads.
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• Crystals HC6 1/2 inch pin spacing 2330 to 2420 kHz in 10kHz steps, 10 in all. Also 2270 to 2279 kHz in 1kHz steps. 10 in all. Also 10, 5, 2, 1 MHz $4 ea ono. FT 243 base with bases 3500, 3680, 3800, 7175, 7425, 6900, 7000, 7150, 8000, 8988, $4 ea. List available. VK1US QTHR 02 6281 3587

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• Telephone 'Ericofon' 1965 model in working order, colour cream, excellent condition. Best offer? Contact Laurie VK2GBM 02 6495 9707 QTHR

• Yaesu FT 101B, Transceiver FV 101 External VFO/Station Clock, 100 watts output, NEC PA tubes, AM, SSB, CW, AC/DC, operation, owners manuals, excellent condition, same owner since new, $350. Kenwood MC80 desk mike $100. Shure 404C hand mike, new $125. Kenwood PS-52 Power supply, new in carton $495 VK2SUS 02 9897 5440 QTHR

• Kenwood TS830S xcvr, remote VFO 240, Shure 444 mic, collection of AR and R & C magazines $800 the lot. John VK2FO QTHR Ph & fax 02 4457 1510

• One light weight morse code key $5.00 One mobile gutter mount antenna rack with 11m antenna $5.00. One KRACO 11m 24 channel CB S/N 805477 with crystals to convert to 10m $100. VK2KRQ. John Le Fevre 02 4369 0458 12A Rickard Road Empire Bay NSW

• Yaesu FT107M H.F. Transceiver, Inbuilt AC power supply, plus 13.8 V DC., WARC, Mint condition with YM35 Hand mike and YM38 Desk mike,and tech. manual. Fully functional. Boxed with all leads and plugs. Original owner $450 plus freight. Allan VK2AGR 02 44711059

WANTED NSW

• Hy-Gain antenna rotator CD-44, Ham II or Ham IV, Bencher BY-1 iambic keyer, Kenwood TS-870 transceiver control software, Swisslog logging software. Tom VK2OE ph 02 9793 2347 (evenings) or vk2oe@arrl.net

• CW transmitter for use on 20m with 813 as final amplifier, complete with power supply and in working order. Commercial or home-brew. Will pay freight from interstate. Ben VK2AJE 02 4457 3220

• Old junk or unloved receivers for completely mad receiving monitoring museum person. People have come close to giving me a hernia. So give me a call. Colin McKinnon's old BL348 found!. Anyway give me a call before the tip! John L21068 02 9533 6261

FOR SALE VIC

• Kenwood TS 820, VFO 820, SP 520, MC 50 Emtron EAT 300A tuner, Kenpro KR400 rotator, TET TE 33 triband beam $1300. PC 686 P150 & CPUC 120 MHz 3.2 Gig HDD CD ROM 1.44 FDD, 32 meg RAM monitor, keyboard, mouse, BJC 210SP printer $650. Derek VK3DD 03 9730 1557 (AH only)

• Vibroplex iambic paddle, as new $160. David VK3DNG 03 9859 4698, email: roddada@rvib2rvib.org.au

• Drake TR7 250W transceiver with PS7 power supply, covers all hambands including WARC receivers 0-30MHz, extras 1.8kHz, 6kHz filters, fan, slow dial drive, Shure mic, shop manual, recently serviced by Drake expert, $1200 ono. You collect. VK3WW 03 5433 3654

• Yaesu FRG-100 communications receiver 50kHz - 30MHz with FRG-100 keypad for freq. Entry etc., DSE cat (P115) No D 2790 E C $725. Antenna rotator Kenpro model KR650XL with control unit, rotation 450 degrees, VGC $400. Len VK3BMY 03 5862 3116 all hours.

• White Elephant Sale. The EMDRC will hold this event on Sunday 30 July 2000 at the Great Ryrie Primary School, Great Ryrie Street, Heathmont, Melways. 49 K11. Doors open 10:30am, table bookings ph: 03 9873 2459 AH or E-mail: emdrc@netspace.net.au

WANTED VIC

• Circuit, manual for tempo VHF FM xcvr model FRT/203 manuf'd by Sankyo Tokushu Musen Co. Circuit, manual for Leader Signal Generator model LSG-10. Circuits for BWD502 and BWD511. Brian VK3WYN 03 5664 1251 QTHR

• Icom IC-481H, 70cm transceiver. Ian VK3MZ 03 9876 3643 or i.stirling@bhtafe.edu.au

• One Paccom PTC1 modem. Please forward details to Ian VK3AXH Ph (03)53413012 or email: igm@netconnect.com.au

FOR SALE QLD

• 2m xcvr TR 7800 $180, FT 726R 2m/70cm, satellite board $800. 6m board, also $200 (both $950, neg) FL2100Z and spare 572BS $700. Tentec dual-paddle key $50. SMPS 13.8v 30A $200. 148 MHz Stainless Yagis, 70cm crossed Yagi. VK4APD QTHR 07 3397 3751

• Yaesu FT101B HF transceiver with Yaesu FV101 external VFO/clock, AC/DC operation, 100 watts output, SSB, AM, CW, complete instruction manuals, same owner since new $350. Includes freight. John Abbott VK4SKY, 0417 410 503, email: interfs@netscape.net, PO Box 1166 Coolangatta 4225 Qld.

WANTED QLD

• Plug in coil boxes for HRO-5T comm. receiver, also National HRO for parts and power supply, WWII suitcase tx/rx type 3 Mark II, also known as (B2). Pay top money. Ray VK4FH PO Box 5263 Daisy Hill 4127, 07 3299 3879, fax 07 3299 3821

• Circuits & handbooks for Philips FM 828 VHF sets. Len VK4JZ QTHR 07 5485 3324

WANTED SA

• Operators manual for Nokia 1600 mobile phone, model No NHE-5NC. Photocopy will do. VK5MAP Paul QTHR 08 8651 2398

• R1155 Communications receiver (WWII vintage ex-RAF). VK5AMR QTHR 08 8278 5118 or email mwrieger@senet.com.au

FOR SALE WA

• Yaesu FT707HF with hand mike $300. Antenna HB 35c 3el tri-beam $250. Galv pipe 12m with guy wires, fittings $40. Coax R6.8 30m $45. Colin VK6ZB 08 9725 8680

• Yaesu FT101E later model (no 27MHz) as is — offers? with DC leads. Must sell. SE 502 23ch converted CB rig 28.300 - 28.600 MHz, DC leads. Any offers? D Handscomb 08 9305 7295

• One 14 m 3 stage windup tower. One 4el triband antenna. One rotator. To be taken down. W Coertse, 120 Calista Ave, Calista WA 6167 08 9419 3879

FOR SALE TAS

• Tono 150W o/p 2m metre linear multi-mode. Kenwood TH78A dual band hand held inc access. Okerblock HF/2m SWR power meter. Dual meter HF SWR power meter, above as new, will negotiate. Boxes, manuals etc. Must sell. David VK7ZDJ 03 6425 2030, 0413 219 680

WANTED TAS

• Vibroplex semi automatic morse key, in good condition. Ph 03 63918925 or email jmcculloch@vision.net.au

FOR SALE NT

• ARDF rxs 2m VK4BRG, kits assembled, working, with antennas. 6 only, bought for Scout activity, not used, $300 the lot or $100 each. Frank VK8FT QTHR 08 8983 2954

MISCELLANEOUS

• If you got your licence before 1975 you are invited to join the Radio Amateurs Old Timers Club. A $2.50 joining fee plus $8.00 for one year or $15.00 for two years gets you two interesting Journals a year plus good fellowship. Arthur Evans VK3VQ or Allan Doble VK3AMD can supply applications forms. Both are QTHR in any Call Book.

• The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road Montrose VIC 3765, tel. 03 9728 5350.

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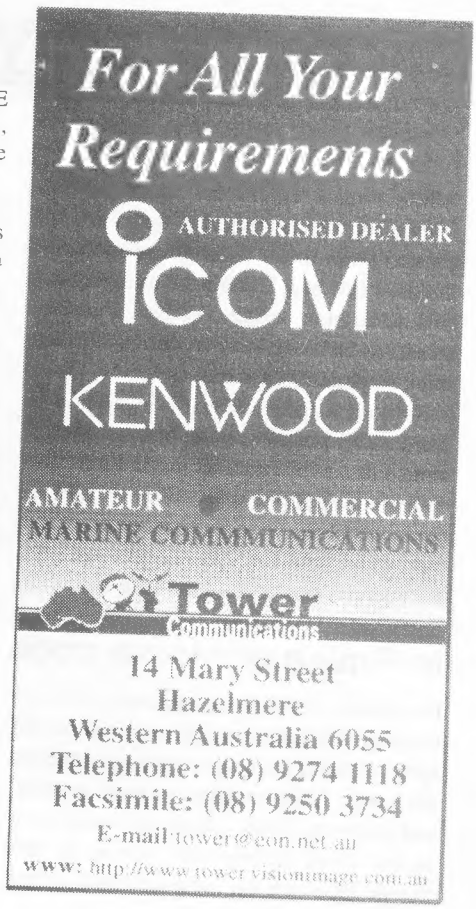
(don't forget the *'l'*, as in the first 5 letters of 'newsletters')



Thanks for the email

We're overwhelmed and pleasantly surprised

For some time we had been hearing grumbles about late delivery of AR into far flung and not so far flung places. So we asked you to let us know by email when you got the magazine and where you were.

This data would tell us if there was a general lag in delivery and/or it would tell us if any particular locations were excessively slow, as sometimes the magazines would clear the lodgement office and then sit around in the regional centres.

The June magazines were lodged or posted in Melbourne on the evening of Wednesday 7th June, and, with a long weekend coming up in most of Australia and fairly heavy mail traffic with the GST and health registration build-up, we were not expecting much until the following Tuesday.

But by 9am Friday 9th the wires were buzzing, reporting a delivery to a private box in Sydney.

Thirty-six hours for one thousand kilometres by 'second class' mail is pretty good.

By Friday evening (10th) most of Victoria and much of NSW had their magazine and on the following Monday WA people were responding, they didn't have a holiday.

By the following Tuesday (13th) we had responses from everywhere in Australia and by Wednesday morning (14th) every State and Territory was represented. Three full working days to all of Australia seems OK to us.

We have yet to assess the total picture given by then 320 responses. Odd postcodes seem slow but they are few and far between. Conversely, for 'second class' mail, five working days to Humpty Doo and six to California seems fair.

We will shortly do a full analysis and present a full report but in the meantime thank you very much for you prompt and helpful responses.

John and Gill Nieman,
Newsletters Unlimited

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OVER TO YOU

An open forum for members' comments.
Please keep letters short: brevity gets priority

RE 5wpm for full call

While I can see the advantages I am wondering if the majority decisions are coming from those without experience in the use of Morse. I believe that to say it is hard to learn is wrong. Typing to a usable speed can be learnt in six months with a few minutes practice each day.

5wpm is a useless speed in radio and 10 wpm is OK but most operators work at 16 wpm plus. My observations indicate that many hams operate with all the weight on the key instead of absorbing the shock in the wrist motion as taught to the commercial operators. Learning a foreign language takes many hours a day for many months, but Morse code abbreviations are recognised internationally. Further you can make a CW station with very simple equipment. It does not require an expensive 'Black Box'. I find the Morse culture with its rhythm and sound pleasant and I find it appreciated by the disabled, the blind and YLs avoiding 'ratpacks'.

We have a wonderful hobby. Why not promote its every facet. CW certainly is a good mode and doing much more for HF occupancy than phone. In contests CW gets through when all else fails. It would be nice if all contests did recognise CW achievement with a certificate.

It is a shame you can no longer get simple CW transceiver kits. Would Clubs consider sponsoring a joint project? Building the kit would teach a lot more about radio than opening a "Black Box'.

The reduction in CW speed required to get on HF surprises me when large numbers of retirees and early retirement people are joining the Amateur ranks. I have no argument with people using computers, I guess they do complement radio activities.

P.A. Orchard, VK2BTT,

In Praise of Morse code

Doubtless there will be many of our members dismayed at the reduction in the speed required for unrestricted access to the HF band. Their concern is both justified and understandable. There are so many of us who can't see any valid reason for this change let alone the proposed zero morse qualification in the future.

Are we to become glorified CB operators or mobile phone users, perhaps the Internet will provide some thrills for many of our anti-morse fraternity.

We all know that CW uses less of the spectrum than even SSB. With the increase in world population and subsequent increase in amateurs worldwide, surely the use of the less demanding CW mode should be encouraged. If we are trying to attract more people to the hobby by making it easier then the "tail sure **is** wagging the dog".

In over 48 years of being associated, with Morse code I never heard of anyone who couldn't pass 10wpm. Other higher speeds sometimes were a problem due mainly to the time limit allowable on certain courses. Anyone who seriously wants to learn Morse to 10wpm will apply himself or herself and achieve that aim. Proof of that can be seen by the long list of callsigns in the Callbook.

Someone may also be able to tell why we have to follow the USA or Canada or UK. in this matter. To have a higher standard than other countries is good. I would think that a standard based on the lowest common denominator is something to be avoided.

CW gets through virtually when nothing else can. ....CW uses less of our resources and spectrum ... CW is distinctive..... CW makes us somewhat unique ....CW is fascinating ... CW does not have an accent ... and, CW sets us apart from the ever increasing numbers of less qualified people attempting to gain access to our facilities which they have coveted for many years.

W.P. McCarthy, VK4WMC

Promoting Amateur Radio and improving AR Magazine

I have, tried in vain to promote amateur radio to get more young people interested in the hobby, I put two good ideas to the Council but they have not been taken up. One was to approach the Head Masters of High Schools about showing the students a short BBC video on radio. 30 minutes devoted to to this project might get some interested students to go further. My other suggestion was to have a display at a well known shopping centre, such as Marion.

I wrote to the management of Marion shopping center. They did approve of such an exhibition and demonstration in their center, but the idea, was abandoned when we could not get 50 or more volunteers to man an exhibition from 9am to 5pm for six days. This I feel is a very sad reflection on the attitude of radio amateurs!

Positively no disrespect is intended towards you but Amateur Radio is a very dull and mundane magazine except for DXpedition articles, and possibly one or two other items, many of the existing articles could be left out or given minimal space on alternate months in favour of more dynamic stories and articles. I have been a reader of Electronics Australia, which featured some great technical articles, and very interesting features, for example Mr. Roger Johnson writes an interesting column called Vintage Radio, this: should appeal to readers of AR, other excellent writers in E.A are Peter R. Jensen. VK2AQJ and Peter Phillips, could AR obtain the services of these writers?

Finally in my humble opinion there are far too many solid state circuits that would only be of interest to a minority group from the point of view of construction let us face the facts, the advent of the solid state device has sent amateur radio down hill dramatically, from the golden age, of building your own home brew equipment with valves and very high voltages! The ubiquitous black box may be a good way to get more young people into the hobby but when CW is no longer a requirement, I suggest that we get more people interested in the golden age of valves to learn where it all began,

Michael M. Gell

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